

Exploring the Interplay of Digital Leadership and Conscientiousness on Innovative Behaviour in Hospitality Frontlines

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Abstract: Innovative service behaviour is indispensable for any organisation to contain innovative activities and attain an edge over competitors from digital transformation. Although extensive research has examined the relationship between leadership and innovative service behaviour, the concept of digital leadership that fosters innovative behaviour remains unclear. Research in this context examines the moderating effect of conscientiousness between digital leadership and frontline personnel's innovative behaviour in the hospitality industry. Upper echelon theory validates this association. We measured the theoretical model in the hospitality sector of Malaysia. Our study employs a three-wave design with a four-month time-lagged interval (N=370). The findings of the study propose that the moderating effect of conscientiousness between the digital leadership and service innovative behaviour is significant. The study has significant implications for applying the effect of digital leadership on momentous workers' outcomes regarding the boundary condition of the effect of employee conscientiousness. The limitations and future research of the study are discussed.

Keywords: Digital Leadership; Conscientiousness and Service Innovative Behaviour; Upper Echelon Theory; Digital Transformation; Hospitality Sector.

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1. Introduction

Organisational innovation is recognised as a pivotal strategy for companies to navigate complicated and dynamic situations while securing a durable competitive edge [38]. Digital transformation is increasingly vital for organisations' innovation [69]. Thus, as a fundamental element of innovation, employee innovative behaviour progressively contributes to organisations' innovation through digitisation [27]. Consequently, stimulating employee innovative behaviour has been increasingly important and essential in the age of digital technology [49]. Leadership has consistently been regarded as a vital precursor in fostering innovative behaviour among several external factors. Previous research has emphasised the significance of several leadership styles in fostering innovative behaviour; however, it has predominantly overlooked the examination of digital leadership, a newly recognised leadership style, in enhancing innovative behaviour. So, digital transformation has transformed the nature and efficacy of leadership, necessitating the usage of a new leadership style, specifically, digital leadership, that enables organisations to achieve a competitive edge. Digital leadership is perceived as a collection of competencies, behaviours, and standards that encourage and motivate people to carry on digital transformation [25]. While firms have acknowledged the

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significance of digital leadership, scholars' interest in this crucial phenomenon has only recently been stimulated [48]. Research on digital leadership delineates its origins, concepts, attributes, and other pertinent subjects associated with digitalisation. Furthermore, leadership and its engagement with employees are essential for the processes of innovation and change, particularly regarding digital transformation [23]. Nevertheless, studies examining the nexus between digital leadership (DL) and innovative behaviour (IB) remain limited [48].

The present study seeks to fill multiple research gaps regarding DL. Digital transformation is a nascent domain, with limited studies addressing the effect of DL on the process of digital transformation [33]. While several studies have examined leadership regarding digital and employees' outcomes, including job motivation and workforce performance [57]; [41]. Nonetheless, the repercussions of DL at the individual level are insufficient [48]. Secondly, while several studies have validated that digital leadership influences employee outcomes, the underlying mechanisms and routes remain unexamined [48]. Research thus far has mainly focused on the association between leadership behaviours aimed at digital transformation and innovative performance. Moreover, Weber et al. [15] examine the impact of E-leadership on employee innovative behaviour. Nonetheless, the current literature fails to offer a comprehensive and unequivocal response to how DL cultivates innovative behaviour, particularly for the service sector.

Thirdly, while previous research has identified certain benefits of digital leadership that produce individual outcomes, there remains a paucity of studies investigating the correlation between digital and individual outcomes as service innovative behaviour (SIB) [42]; [44]. Service innovation behaviour refers to employees' proactive actions in developing new goods and processes, as well as enhancing current ones, to foster innovation in the workplace [10]. The formulation of innovative concepts is a multifaceted process encompassing the creation, advocacy, and execution of original methodologies [47]. This digital transformation process involves numerous risks, obstacles, and dilemmas; thus, effective navigation necessitates digital leadership, typically linked to digital expertise, communication, and innovative concepts [16].

Certain research has investigated how digital leader cultivates the behaviour towards innovation, particularly in the service sector [42]; [6]. Fourthly, prior research has established that inventive behaviour depends on various interrelated individual, group, and organisational characteristics [18]. Limited research exists on how digital leader cultivates the behaviour towards innovation, particularly in the service sector, and even fewer studies examine the moderating influence of other variables [48]. Nonetheless, there is negligible information on the boundary conditions of the positive correlation between DL and SIB. This lacuna in the literature constrains our comprehension of the timing and mechanisms by which leaders' digital behaviour enhances service innovation within organisations.

We present our initial research question: In what ways do digital leaders augment service innovation behaviour within the hospitality sector? Limited research exists that demonstrates the correlation between digital leadership and boosting innovative behaviour [64]; [48]. If a digital leader fosters a favourable association with behaviour regarding service innovation, then the next question to consider is: under what circumstances does this relationship manifest? Research regarding employee behaviour suggests that employees exhibiting high levels of conscientiousness are more likely to respond positively to a leader's encouragement of innovation, since they tend to be accountable, organised, and motivated [20]; [1]. This input establishes a more robust way of how digital leadership increases innovative behaviour in the service sector. In the study, we suggest a model. We provide significant additions to the literature by formulating and evaluating this model.

The study focuses on how digital leader cultivates the behaviour towards innovation, particularly in the in-service sector, which is still nascent, with limited research exploring this significant relationship, predominantly through cross-sectional studies. We analyse this significant link using a thorough moderated model with a time-lagged research methodology. These initiatives also enhance our conceptual comprehension of the digital leader and the behaviour towards innovation, particularly in the service sector relationship. Third, we investigate a crucial yet neglected domain of research within the hospitality sector, where behaviour regarding innovation forms one of the most significant determinants of employees' customer service performance [39]. Ultimately, we investigate the moderating influence of a significant trait, conscientiousness. This signifies a distinctive contribution, particularly concerning the nexus between digital leaders and the behaviour towards innovation, particularly in the hospitality industry. Our research on conscientiousness provides significant insights for managers, individuals, and organisations aiming to enhance innovative behaviour in the workplace.

1.1. Theoretical Framework and Hypothesis Development

Digital leadership is essential for fostering innovation within organisations. Digital leadership can enhance innovative performance, strengthen service innovation capabilities, foster open innovation, promote responsible innovation, and drive green innovation. Furthermore, digital leadership can significantly enhance the impact of digital technology utilisation and innovative capacity. Consequently, we assert that a favourable correlation exists between digital leadership and the behaviour towards innovation. Certain research indicates that digital leaders need to assume various tasks essential for fostering employee

innovative behaviour throughout digital transformation. The digital transformation leadership framework, grounded on the competing values framework, has delineated seven functions for digital leaders [14].

These distinct tasks necessitate that leaders exhibit related behaviours, such as identifying new opportunities, analysing changes, exploring innovative methods, enabling people to experiment, disseminating pertinent information, among others. Another study similarly examined five functions of digital leaders, emphasising that they should facilitate employees in expanding their perspectives, fostering innovation, and collaborating with others [40]. A recent study conducted a thorough analysis of pertinent literature, identifying eight key functions of digital transformation leaders. It emphasises the necessity for leaders to endorse innovative services and develop digital solutions to enhance employee skills in the digital workplace [50]. Simultaneously, certain studies have documented the innovative behaviour of digital leaders.

A digital leader fosters innovative behaviour by prioritising innovation, accelerating change implementation, promoting the adoption of new methodologies, encouraging employee collaboration, and embracing innovation. The distinctive behaviour of digital leaders can enhance staff innovation. Digital leadership may motivate people to explore innovative technologies and contemplate alternative problem-solving methods. Digital leadership provides resources and implements structural changes, guiding employees towards creative work practices. Digital leadership can establish an effective digital workplace that fosters employee creativity [56]. The influence of digital leaders on cultivating innovation behaviour, particularly in the service sector, was found to be as anticipated.

This evolution can be elucidated through the Upper Echelon Theory [25], which posits that the attributes of top managers shape organisational outcomes. This theory posits that the attributes of the top management, including opinions, values, attitudes, and professional competence, significantly influence organisational decision-making [3]. The outcome is elucidated by the correlation between one of the constructs and innovative behaviour, highlighting the attributes of top management and the necessity for managers to adapt to technological transition for innovation [67]. Moreover, recent empirical data have shown that digital leadership is essential for enhancing employee innovation [66]; [34].

(H1): Digital leadership positively affects service innovation behaviour.

1.2. Moderating Role of Conscientiousness

Conscientiousness is a comprehensive personality attribute that indicates the extent to which an individual is disciplined and reliable, as opposed to reckless and impetuous [52]. Elevated ratings in conscientiousness generally indicate an individual possessing significant self-discipline, organisation, reliability, and goal orientation [53]. Sadat Mousavi and Ebrahimi [61] argue that conscientiousness refers towards self-discipline, and striving for success against external actions or expectations is related to the way individuals control, regulate, and direct impulses. They believe employees with conscientious personalities are more creative and inclined towards innovation [32]. Employees with a conscientious personality strive to reorganise their work lives, consider all possible future outcomes, and are always seeking new experiences.

Conscientiousness may hinder creative behaviour [17]; [5]. Adhering to norms, regulating impulses, obeying regulations, and pursuing established objectives may contradict the pursuit of altering the current situation quo and innovating improved methodologies. From an interacting perspective, conscientiousness tends to inhibit creative activity only in contexts that prioritise conformity, adherence to rules, diligence, and self-discipline to fulfil established expectations, particularly the maintenance of the existing status quo. Conscientiousness may inhibit creative behaviour alone when the environment promotes the expression of specific inclinations associated with the attribute [32]. When bosses meticulously observe subordinates' actions and colleagues are hostile, individuals with high conscientiousness are inclined to manifest their conventional and regulated tendencies, resulting in diminished creative activity.

The effect of conscientiousness on digital leadership is important because it increases innovative behaviour by influencing their ability to provide support and implement digital initiatives. Conscientious employees are more likely to grow indispensable digital skills to contribute to digital activities [54]. Conscientious employees are stimulated to cultivate digital innovations, develop growth and productivity [12]. Conscientious individuals commit to enhancing their digital skills to support digital leaders [63]. Conscientious workers acclimatise to digital changes, espouse new technologies and developments, and are supported by digital leaders in facing challenges. Conscientious employees establish appropriate digital behaviour, upholding security and moral standards [22].

Drawing on UET, the researcher theorises that the characteristics of digital leadership foster employees' creativity-centred efficacy that assists in making a vibrant vision and mission, provides employees with the confidence in developing skills and ability to enhance behaviour regarding innovation [64]; [9]; [36]. Drawing on the theory of planned behaviour (TPB) for the moderating role of conscientiousness. How conscientious employees act as well-disciplined, organised, perseverant and diligent

to obtain productive outcomes. The role of employees' conscientiousness boosts employees' innovative behaviour [21]; [45]; [11]. Furthermore, TPB validates that digital leadership brings significant value, as innovative behaviour significantly contributes to this, while employee conscientious support acts as digital leadership [21]; [45].

H2: The significant effect of conscientiousness on service innovation behaviour.

H3: The moderating effect of conscientiousness between the association of digital leadership and service innovative behaviour; as such, the relationship is stronger when the level of conscientiousness is high.

2. Methodology

To empirically assess our model, we employed a time-lagged research approach in our analysis. We administered an online survey via the Prolific data collection service to gather data from hospitality professionals in Malaysia. This survey was executed in three stages, with a four-month interval between each phase; prior research in the leadership domain has advocated for a four-month hiatus between every data collection session [39]. At T1, we gathered data from 387 respondents concerning their supervisors' digital leadership techniques. After four months (at T2), we requested these 387 participants to supply data on the conscientiousness scores. At T2, 381 respondents supplied the needed data, and subsequently, four months following the conclusion of the T2 phase, we solicited the same 381 participants to evaluate their service creative behaviour. At T3, 378 individuals participated, and we excluded three responses identified as multivariate outliers, resulting in 375 valid responses for subsequent analyses. We employed the respondents' Prolific IDs as distinctive codes to correlate and consolidate the data they submitted throughout the three waves. Among the 237 responses, 62% were female. Additionally, 47% were aged 20 to 29 years, while 22% were aged 30 to 39 years. Furthermore, 46% possessed a graduate degree, while 59% had between four and six years of working experience in the hospitality sector.

2.1. Measures

In our study, the Informatics Leadership Scale, established by Ulutaş and Arslan [43], is applied to assess digital leadership (DL) based on employee perceptions. The other researchers used this scale to assess digital leadership [55]; [46]. This scale comprises a total of eighteen items for three dimensions, with six items allocated to each dimension. These dimensions include information, communication, and orientation. The present study adapted six orientation items to assess digital leadership. The most suitable scale for the followers' perspective regarding their supervisor's digital activity is the most suitable scale. We subsequently adapted a six-item scale created by Hu and Bentler [35] to assess service innovative behaviour. The researcher used eight items established by Costa Jr et al. [51] to measure conscientiousness. We applied a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

2.2. Data Analysis

This study assessed the technique of measurement model for internal consistency, reliability (α), composite reliability (CR), as well as average variance extracted (AVE) of the constructs. To assess the internal consistency, we applied Cronbach's alpha (α) and CR. Those items are retained which has a value greater than 0.50 [8]. The results for alpha, composite reliability, and convergent validity, including AVE values, are obtained. Table 1 presents for digital leadership ($\alpha = 0.817$, $CR = 0.866$, $AVE = 0.519$), conscientiousness ($\alpha = 0.944$, $CR = 0.954$, $AVE = 0.720$), service innovative behavior ($\alpha = 0.828$, $CR = 0.874$, $AVE = 0.538$) respectively.

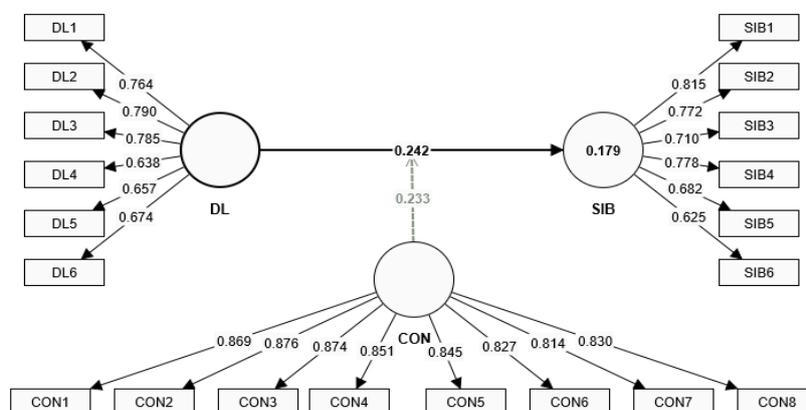


Figure 1: Internal consistency

Further, Hair et al. [28] suggest that CA and CR values would be > 0.70 , so we found the values are in a suitable range. Then the study evaluated the Fornell-Larcker and heterotrait–monotrait (HTMT) ratio to evaluate the discriminant validity (DV) [31]. The HTMT ratio results should be < 0.090 in Table 2.

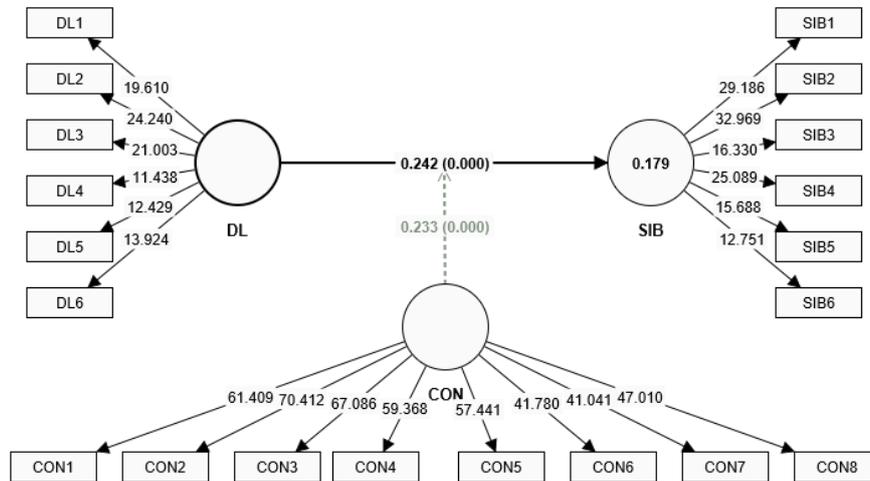


Figure 2: Path coefficients

Note: DL, digital leadership, service innovative behaviour, CON, Conscientiousness (Figure 2).

The values of kurtosis and skewness are in the range of $+1.96$ and -1.96 in Table 1, which designates the normal distribution of the sample [29]. Moreover, the study assessed the variance inflation factor (VIF) to evaluate the multicollinearity issue in the data. Diamantopoulos and Sigauw [2] suggest the values of VIF should be < 3.3 , and we found them in an acceptable range, so, in the data, no problem of multicollinearity (Table 2). The values of determination of coefficient (R²) should be > 0.1 [68]. So, Table 2 presents $R^2 = 0.17$, which is a weak level of predictive accuracy [68]. The f^2 values fall in the recommended range in the current study, as suggested by Cohen [26]. The study found that these values of 0.030 and 0.028 show the small impacts of exogenous and endogenous constructions in Table 2 (Figure 1).

Table 1: Internal consistency and normality results

Construct	Items	Factor Loadings	A	CR	AVE	Skewness	Kurtosis
T1-DL	DL1	0.764				-0.360	-0.821
	DL2	0.790				-0.324	-0.991
	DL3	0.785	0.817	0.866	0.519	-0.350	-0.785
	DL4	0.638				-0.260	-1.093
	DL5	0.657				-0.331	-1.024
	DL6	0.674				-0.099	-0.745
T2-CON	CON1	0.869				-0.504	-0.786
	CON2	0.876				-0.309	-1.038
	CON3	0.874				-0.204	-1.040
	CON4	0.851	0.944	0.954	0.72	-0.224	-1.184
	CON5	0.845				-0.322	-1.011
	CON6	0.827				-0.347	-0.790
	CON7	0.814				-0.498	-1.006
	CON8	0.830				-0.455	-0.815
T3-SIB	SIB1	0.815				-0.023	-0.809
	SIB2	0.772				-0.219	-0.474
	SIB3	0.710				-0.172	-0.692
	SIB4	0.778	0.828	0.874	0.538	-0.022	-1.031
	SIB5	0.682				-0.058	-0.867
	SIB6	0.625				-0.088	-0.962

Note: N=370; T1; Time 1, T2; Time 2, T3; Time 3, DL; digital leadership, SIB; service innovative behavior, CON; Conscientiousness.

Streukens and Leroi-Werelds [62] recommend a Bootstrapping procedure with 5000 samples was utilised to examine relationships between exogenous constructs (digital leadership) and moderating construct (conscientiousness), and endogenous construct (service innovative behaviour). The significance testing results also display that digital leadership at Time 1 had a significant and positive relationship with service innovative behaviour at Time 3 ($\beta = 0.242, t = 3.931 > 1.96, p = 0.001 < 0.05$) in Table 3. So, the result accepts the hypothesis.

Table 2: Discriminant validity (HTMT ratio), effect sizes and results of variance

	CON	DL	R ²	VIF	f ²
T2-CON				2.788	0.030
T1-DL	0.844			2.568	0.028
T3-SIB	0.364	0.401	0.179		

Note: N=370; T1; Time 1, T2; Time 2, T3; Time 3, DL; digital leadership, SIB; service innovative behavior, CON; Conscientiousness.

Another significance testing result also shows that conscientiousness at Time 2 has a significant and positive nexus with service innovative behaviour at Time 3 ($\beta = 0.261, t = 3.431 > 1.96, p = 0.001 < 0.05$) in Table 3. So, the result accepts the hypothesis. The moderating effect of conscientiousness at Time 2 between the association of digital leadership at Time 1 and service innovative behaviour at Time 3 is significant, as the relationship is stronger when the level of conscientiousness is high ($\beta = 0.233, t=4.904 > 1.96, p=0.000 < 0.05$) in Table 3.

Table 3: Path coefficient

Relationships	B	t values	P values
T1-DL -> T3-SIB	0.242	3.931	0
T2-CON ->T3-SIB	0.261	3.431	0.001
T2-CON x T1-DL ->T3-SIB	0.233	4.904	0

Note: N=370. $t > 1.96$ & $p < 0.05$; T1; Time 1, T2; Time 2, T3; Time 3, DL; digital leadership, SIB; service innovative behavior, CON; Conscientiousness (Figure 3).

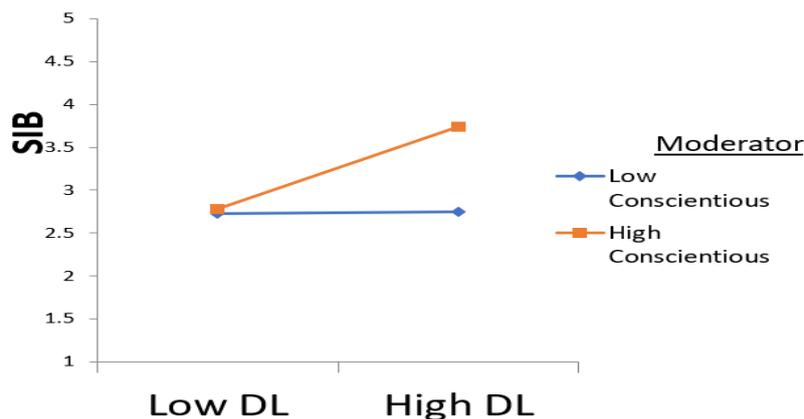


Figure 3: Moderating role of mindfulness between DL and SIB

Note: DL, digital leadership, SIB, service innovative behaviour.

Figure 3 demonstrates that the moderating effect of mindfulness robusts the positive nexus between DL and SIB. In Table 4, the SRMR value is 0.103, which suggests a relatively good fit, but not excellent [8]. The NFI value is 0.782 in Table 4, which is in the range between 0 and 1, whereas the standard value is suggested by Hu and Bentler [35]. Table 4 displays a value for the NFI; 0.782 represents a good model fit.

Table 4: Assessment model fit

	Saturated model	Estimated model
SRMR	0.103	0.103
d ULS	2.209	221
d G	0.539	0.531
Chi-square	1171.784	1171.769
NFI	0.782	0.782

3. Discussion

This study was undertaken to assess how and when digital leadership fosters behaviour regarding innovation in the hospitality sector. Validating UET [64]; [9]; [36]. We also investigated how conscientiousness moderates the indirect association between digital leadership and service innovative behaviour. Drawing TPB, the role of employees' conscientiousness boosts employees' innovative behaviour [21]; [45]; [11]. Further, TPB also validates that digital leadership causes significant value as innovative behaviour, while employee conscientiousness supports the act of digital leadership [21]; [45]. This result elucidates how digital leadership fosters innovative behaviour. Frontline personnel have varying responses in cultivating innovative behaviours within the hospitality sector. They offer innovative digital quality services and introduce more efficient food packing procedures, delivering unique and timely solutions for dining and lunch table setting, room management, and cleaning. The findings of the current study corroborate the direct relationship between digital leadership and the behaviour towards innovation, particularly in the service sector [42]. Nonetheless, the majority of prior studies on digital leadership and innovative behaviour employed a cross-sectional approach [64]; [42]. Unlike prior investigations, this research derived more accurate results through a three-wave time-lagged approach. This study addresses the infrequent time-lagged design on the nexus of DL and IB.

Digital leadership significantly influenced innovative behaviour, therefore supporting H1. The finding on how digital leadership cultivates innovative behaviour was consistent [24]; [36]; [59]. Simultaneously, the research is elucidated by UET. The leader's prior experience and competencies influence their decisions, as posited by the theory. Considering this, these attributes facilitate the development of employees' innovative behaviour [13]; [19]. This idea posits that the attributes of the top management, including views, beliefs, values, attitudes, and professional skills, significantly influence decision-making [30]. This outcome is elucidated by the relationship between a specific characteristic and innovative behaviours, suggesting that a manager cannot embrace innovation without undergoing technological transformation [24]. Furthermore, the study identified a strong moderating influence of conscientiousness on the relationship between digital leaders and the behaviour towards innovation, particularly in the in-service sector of the service industry. In our model, conscientiousness serves as a boundary condition that enhances the indirect relationship between digital leadership and innovative behaviour, resulting in stronger relationships for employees with elevated levels of conscientiousness. Frontline staff are effectively managed, organised, and disciplined to service customers innovatively, particularly in the hospitality business. Drawing TPB, the role of employees' conscientiousness boosts employees' innovative behaviour [21]; [45]; [11]. Further, TPB also validates that digital leadership causes bring value as innovative behaviour, while employee conscientiousness supports the act of digital leadership [21]; [45]. Thus, H2 received approval.

3.1. Theoretical Implication

By discussing the significant effect of digital leadership, our findings for this study convey significant theoretical implications for the employee's innovative behaviour in service innovation. Preceding research has established that several leadership styles affect innovative behaviour [25]; [58]. Yet, the significant leadership style of digital leadership and its outcome have been explored [7]. In this regard, our research delivers empirical evidence of how digital leadership fosters individual consequences, particularly innovative behaviour. Further, we empirically examined the call for more study of the effects of digital leadership [16]. First, we use the new theoretical framework of UET [64]; [9]. Mihardjo et al. [37] examined how digital leadership upsurges innovative behaviour in the service sector. So, our findings are in line with some current empirical research viewing the nexus of digital leadership and behaviour regarding innovation in the service sector [64]; [42]. Previous studies on digital leadership have also highlighted that supervisors' innovative mindset can strengthen workers' innovative behaviour. These studies are also based on theories of social learning [4], leadership theory [64], and (JD-R) theory [6], which could not validate the whole perspective of digital leadership and its role in innovative behaviour. Therefore, UET validates this association with a new perspective, which posits that the attributes of the leader shape individual outcomes. Further, we empirically examined the call for more study of the effects of digital leadership [16]. Moreover, our study's results contribute to understanding the moderating role of conscientiousness in digital leadership, thereby enhancing innovative behaviour in the hospitality industry. Conscientious employees provide support with flexible cognition that encourages their colleagues to create new perspectives [19].

The TPB approves the finding that conscientiousness is an influential construct to stimulate innovative behaviour in the hospitality industry. Due to the lack of evidence in previous literature, the findings exhibit that employees' conscientiousness plays the pivotal role in cultivating innovative behaviour by cooperating with a digital leader. This study highlights the significant effect of digital leadership, indicating important theoretical implications for employees' innovative behaviour in service innovation. Initially, we employ the novel theoretical framework of UET [64]; [9]. Mihardjo et al. [37] explored how digital leadership cultivates innovative behaviour within the service industry. Our findings align with recent empirical studies examining how digital leadership through digital transformation promotes behaviour in service innovation [64]; [42]. Prior research on digital leadership has emphasised that a supervisor's creative perspective can enhance employees' inventive behaviour. Furthermore, the findings of our study recommend that the moderating personality trait of conscientiousness may enhance how digital leadership fosters innovative behaviour within a hospitality business. Conscientious employees offer support through flexible cognition, which encourages their colleagues to develop novel perspectives [19]. The TPB endorses the conclusion that conscientiousness is a significant factor in promoting innovative behaviour within the hospitality sector. Due to the absence of evidence in prior literature, the findings indicate that employees' conscientiousness is crucial in fostering innovative behaviour through collaboration with digital leaders.

3.2. Practical Implications

The present study holds considerable empirical significance for workers, supervisors, and organisations. Initially, digital leadership encourages supervisors to appropriately assess their digital conduct to foster innovative behaviour within the hospitality sector. Organisations value innovative behaviours for their significant outcomes. According to our findings, supervisors' digital conduct promotes innovative behaviour. Consequently, organisations need to endorse and appreciate leaders' digital conduct to enhance innovative behaviour within the service industry. Supervisors can foster positive digital behaviour by promoting open communication, providing digital tools, and maintaining strong interpersonal relationships with staff. Secondly, our findings should encourage management to implement relevant training and diligent programs designed to help supervisors in fostering productive behaviours that motivate staff to apply their skills and knowledge in enhancing creative practices within the hospitality business. Conscientious employees are more likely to develop essential digital abilities, enhancing their ability to engage in digital tasks. These efforts may involve overseeing training sessions aimed at fostering supervisors' innovative mentality to motivate employees to share their skills and knowledge in promoting innovative behaviour through incentives and sanctions.

3.3. Limitations and Future Research Directions

This study possesses some limitations that could be examined in future research. First, based on Upper Echelon theory, this study examined the impact of digital leadership on service innovative behaviour. Additionally, TPB was employed to elucidate the role of conscientiousness as a boundary condition, highlighting the nexus between digital leadership and service innovative behaviour. Therefore, future researchers may focus on other frameworks from several theoretical perspectives, like SET, social cognitive theory and social learning theory. We conducted an inclusive moderated analysis using a three-wave time-lagged research methodology to investigate the association between digital leadership and service innovative behaviour in the hospitality industry. Although this study examined the moderating effect of conscientiousness, a personality trait, the current study suggests that individual characteristics, work characteristics, LMX, and leaders' characteristics also influence the efficacy of leadership [65]. Future researchers may examine other robust moderators, like task creativity, power sharing or distance, or LMX. We may also consider additional relevant organisational and HRM factors that could significantly influence innovative behaviour in the hotel and other service sectors. Subsequent research may investigate these dimensions. We examined digital leadership concerning staff perspectives within the hospitality sector. Future research may assess leadership perspectives to motivate employees by imparting digital knowledge to enhance their skills in fostering innovative behaviour. We conducted the survey online to gather data (Prolific Academic). This service has several deficiencies, such as responder biases [60]. Consequently, future researchers may evaluate our model with alternative survey techniques.

4. Conclusion

Innovative behaviour is highly valued and considered a significant outcome, particularly within the hospitality business. Employing UET [9], [37], we ascertain that the attributes of digital leadership foster innovative behaviour within the hospitality industry. Drawing TPB, the role of employees' conscientiousness boosts service innovative behaviour with the support of digital leadership [21]; [45]; [11]. Furthermore, TPB validates that digital leadership fosters values that promote positive, innovative behaviour, while conscientious employees support the role of digital leadership [21]; [45]. Employees' conscientiousness, however, serves as a boundary condition for how digital leadership fosters innovative behaviour, particularly in the hospitality industry.

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Ethics and Consent Statement: Ethical approval was obtained, and consent was secured from the organization and individual participants during data collection. The authors confirm that the study adhered to all relevant ethical guidelines.

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