



## Research article

# Happiness at workplace on innovative work behaviour and organisation citizenship behaviour through moderating effect of innovative behaviour

Samer Ali Al-shami<sup>a,\*</sup>, Abdullah Al mamun<sup>b</sup>, Nurulizwa Rashid<sup>c</sup>,  
Chew Boon Cheong<sup>c</sup>

<sup>a</sup> Institute of Technology Management and Entrepreneurship, Universiti Teknikal Malaysia Melaka, 76100 Durian Tunggal, Melaka, Malaysia

<sup>b</sup> Universiti Kebangsaan Malaysia, Graduate School of Business, 43600 Bangi, Selangor, Malaysia

<sup>c</sup> Faculty of Technology Management & Technopreneurship, Universiti Teknikal Malaysia Melaka, 76100 Durian Tunggal, Melaka, Malaysia



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## ABSTRACT

The current study primarily aims to investigate the happiness at workplace (HAW)-innovative work behaviour (IWB) correlation through the mediating effect of organisation citizenship behaviour (OCB) and moderating effect of organisational innovative culture (OIC). Notably, 383 questionnaires were collected from lecturers employed in three local universities in Malaysia and subsequently evaluated using structural equation modelling (PLS-SEM). Based on the study outcomes, HAW positively and significantly affected employees' IWB through the mediating and moderating effects of OCB and OIC, respectively. University directors should establish effective HAW approaches that elevate workers' organisational satisfaction, involvement, and commitment and develop a creative culture that acknowledges and complements innovation. This study, which pioneered the examination of the moderating effect of OIC, (i) filled the literature gap on the HAW-IWB link in emerging nations and (ii) expanded the 'broaden and build' and 'social exchange' theories with concrete proof of the HAW impact on OCB.

## 1. Introduction

Every dimension of human life is undergoing a drastic shift owing to information revolution, which ascertains organisational competitiveness. Innovative workers with creative problem-solving and opportunity-manipulation ideas are essential company assets that successfully direct the transformation with innovation development. Nevertheless, organisations that strive to catalyse employees' innovativeness in line with the specific shifts inadvertently pressure them to create novel solutions through innovative thinking and astute resource utilisation (see Fig. 1).

Although innovative behaviour has garnered much scholarly interest, most past works merely emphasised the impacts of specific antecedents (leadership style, management strategy, and sufficient resources to develop employees' skills and productivity) with little emphasis on human cognition and emotions that affect workers' innovative behaviour [1]. Research on employees' workplace emotions has established a novel study domain by underscoring the essentiality and pertinence of emotions, such as happiness in the field of management. Following, Usai et al. [2] positive emotions resembling happiness are palpable when people recall experiences

\* Corresponding author. , .

E-mail addresses: [samshami79@gmail.com](mailto:samshami79@gmail.com), [samerali@utem.edu.my](mailto:samerali@utem.edu.my) (S.A. Al-shami).

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that facilitate or parallel their goals. Positive emotions potentially generate the following work outcomes: commitment, innovative behaviour, task performance, and OCB.

Happiness is a key component of subjective and objective well-being under the global model theory [3]. Subjective well-being is ascertained by people's self-evaluation of life satisfaction and happiness, while objective well-being is influenced by income, education, health, and other material and social resources that improve personal welfare.

The popularity of the happiness concept, which catalyses economies and societies, has led to the United Nations (UN) publishing the World Happiness Report (WHR) in 2010. Based on the WHR (2021) media round-up, Malaysia (current research location) ranked 79th out of the 146 nations surveyed on the happiness quotient following the relatively low individual morale and life quality owing to the global COVID-19 spread and financial downturn (Yang and Ma, 2020). Recent research Ibrahim et al. [2] disclosed the adverse impact of COVID-19 on workers' retention and creative performance in the Malaysian manufacturing sector. Local universities in the Malaysian higher education sector are significantly influenced by regional- and global-scale developments. In Manaf et al. [4] the academic staff in local universities observed the following symptoms, which are depression (28.7%), anxiety (50.1%), and stress (14.8%). This finding underscores the need to create a HAW climate for optimal OCB among organisational members.

As the discretionary, advantageous, tangible, and intangible activities and behaviours resulting from optimal workplace rapport Podsakoff et al. [5] OCB denotes an individual-level aspect with a positive correlation to the organisational capacity to effectively execute relevant approaches and gain a competitive advantage [6]. The development of reciprocity through workplace rapport creates an atmosphere that encourages employees to assist one another and the company beyond their assigned professional duties Anwar et al. [7] and their innovative behaviour. As such, most educational establishments, including universities strived to develop a positive environment through happiness for improved OCB.

Despite extensive research on the role of happiness in workers' involvement and performance Coo and Salanova [8], innovativeness Bibi et al. [9], and OCB Wang et al. [10] the mediating effect of OCB on the employees' HAW-IWB link remains underexamined. The essentiality of employees' IWB has been empirically acknowledged, particularly in Western nations. Notwithstanding, authoritarian management styles with regards to innovative culture have been relatively disregarded in other Asian nations despite not being a novel phenomenon. Although various Malaysian public universities have incorporated HAW and encouraged IWB through organisational reform, studies on the correlation among HAW, OCB, IWB, and OIC in public universities remain lacking. Despite the literary impetus in studies on workplace happiness and their significance in catalysing emotions that facilitate innovative behaviour, the organisational interaction of innovative culture controlled this relationship. This situation leaves a knowledge gap in the moderating effect of OIC on the HAW-IWB association.

This study aimed to bridge the literature gaps through four key objectives: (i) to investigate the HAW-IWB relationship with the broaden and build theory; (ii) to examine the HAW-OCB relationship through the social exchange theory; (iii) to investigate the mediating effect of OCB on the HAW-IWB; (iv) to explore the moderating effect of OIC on the HAW-IWB relationship. The study outcome offered two primary theoretical contributions as follows: (i) expanded the broaden and build theory with a model that justifies how positive emotions (HAW) broaden the IWB of employees in tertiary-level institutions within emerging nations; (ii) expanded the social exchange theory by investigating the correlation between happiness aspects and OCB; (ii) expanded the global model theory with a model explaining the HAW-IWB link through the mediating effect of OCB. As one of few studies conducted in universities and the first work in Malaysia, this research also provided managerial contribution as it is.

## 2. Theoretical background and hypothesis development

The current research paralleled the broaden and build theory. In line with Fredrickson [11], "positive emotions like happiness broaden people's awareness like innovative behaviour and creative behaviour by increasing their attentional range and their mental resources by ensuring mental presence and availability to respond and tackle any stimulus". The theory focuses on how more positive emotions lead to optimal cognition habits. For example, optimistic individuals are inclined to engage in novel and unconventional initiatives and accept differences of thought and opinion rather than being judgemental. Contrarily, their pessimistic counterparts tend to forgo valuable opportunities as adverse impacts alter insights on reality and obstruct significant outcomes. Fisher [12] highlighted that HAW is influenced by affective commitment while employees' work satisfaction and involvement affected employee behaviour. Job satisfaction denotes a positive emotional state resulting from employees' work experience and attribute assessment Zhang et al. [13] Work involvement implies the multiple means of catalysing employees towards organisational contribution Dlouhy and Casper

H5: The OIC moderates the relationship between HAW and IWB.

H6: The OIC moderates the relationship between OCB and IWB.

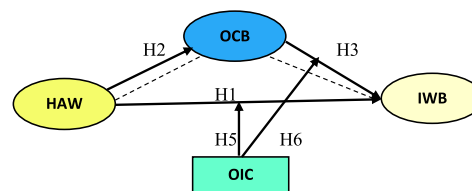


Fig. 1. Framework (source: Authors).

[14] and Schaufeli et al. [15] for optimal performance characterised by professional commitment, vigour and passion [16]. Essentially, HR practices positively impact work involvement and encourage employees to devote much time and effort to the organisation [17]. Past scholars documented positive links between work satisfaction, work involvement and affective commitment (regarded individually or with other variables) on organisational performance and productivity Vijayalakshmi et al. [18], Eliyana et al. [19], Gibaldi and McCreey [20] and Ribeiro et al. [21] and examined the HAW impact on extra-role behaviour or OCB [22]. The IWB concept constitutes other ways to seek new method developments, technological and strategy applications, novel problem-solving techniques, and task achievement by determining the necessary resources that manifest ideas into actual outcomes [23]. The following factors have been examined as significant IWB determinants: team attributes, individual personality traits, leadership factors, intrinsic job and organisation, organisational interactions, and diverse techniques Afsar and Masood [24], Janssen [25] and Scott and Bruce [26]. This investigation led to general IWB factor description and categorisation at organisational and individual levels. University-affiliated organisations that seek proactive lecturers with higher-order skills struggle to manage their lecturers owing to restricted resources, work uncertainties, low developmental possibilities, and poor human resource implementations [27]. Hence, lecturers' competence inevitably developed their IWB. Universities with such lecturers are heavily dependent on their OCB, which operates as a system of values and expectations among lecturers [28]. It is deemed essential to motivate employees' IWBs following the significance of developing conducive work environments where workers with insightful ideas experience optimal work satisfaction, engagement, and commitment. Intriguingly, innovative employees are seldom motivated towards innovation and idea generation. As such, innovative behaviours and innovation do not typically constitute part of workers' professional assignments but demonstrate a new evaluation of outstanding behaviour. Knezović and Drkić [29] highlighted the paucity of current works on the fundamental factors underlying IWB, such as happiness.

## 2.1. Theoretical framework

### 2.1.1. Happiness and innovative behaviour

Joy and hope constitute two positive emotions that catalyse individuals to examine and absorb novel information and improve creative thinking and innovativeness. Happy lecturers tend to display attitudes that increase their work performance [30]. In Pryce-Jones et al. [29] happy workers perform two times more than their unhappy counterparts with six times more enthusiasm and ease. Such employees could uninhibitedly and courageously explore novel avenues with happiness and light-heartedness as vital elements. Likewise, optimistic employees experience a conducive working environment [31]. Such positive emotions encourage workers' engagement to establish effective strategies, obtain funding, and inspire others to act creatively through IWB.

Parallel to past literature [32], happy workers generate creative ideas and novel approaches for task completion. Tan et al. [33], highlighted the positive and significant connection between university students' happiness and their capacity to produce novel ideas. Optimistic workers who frequently reflect agility and creativity are more inclined to acknowledge and embrace innovative ideas, learn novel information, and optimise innovative behaviour [34]. As almost one-third of a worker's time is spent at work daily, it is pivotal to ensure enjoyment and happiness at work. Individuals utilise positive humour to experience satisfaction, alleviate their scepticism, and increase their openness to novel notions and risk-taking behaviour: a key component of innovative thinking [35]. In this vein, the first hypothesis was developed.

**H1.** There is a positive relationship between HAW and employees' IWB.

## 3. Happiness and organisational citizenship behaviour

Under the social exchange theory Gouldner [36], employees reciprocate concerns for their company upon perceiving organisational care [37]. Companies could anticipate high commitment and performance levels and other positive behaviours from fairly-treated employees (viewpoint on diversity management practices) regardless of their gender, age, and race Gilbert et al. [38]. Such positive outcomes establish and sustain mutually-beneficial employee-employer rapport, thus resulting in organisational stability, psychological safety, and institutional peace. Despite the multitude of studies on OCB and its antecedents, research involving the impact of happiness on OCB and the degree to which it (directly or indirectly) influenced OCB through other variables remain scarce. Although a study in India [31] examined the HAW-OCB correlation among private-sector bank employees, no research is yet performed on public university lecturers in Malaysia. This study bridged the aforementioned literature gap and expanded the current body of knowledge with the second hypothesis.

**H2.** There is a positive relationship between HAW and OCB.

## 4. Organisational citizenship behaviour and employees' innovative behaviour

Organisations in dynamic markets are compelled to establish change-related strategies in managing the market fluctuations resulting from external factors, particularly technological and consumer behaviour changes. Such shifts place pressure on the organisational management to hone their employees' internal capacity, such as creativity for innovative product and service development. Thus, OCB plays a vital role in business transformation through positive and constructive (employee) actions and behaviours and organisational strategies, protocols, and policies. For example, OCBs facilitate workers to accommodate the innovative processes associated with unpredictability, environmental changes, and resource depletion [39]. Employees willingly perform additional tasks or learn novel skills to accommodate the changes encountered in current work settings when they treat others fairly and are being

treated fairly with maintaining self-control and respect. It is deemed crucial for companies to facilitate and support employees' OCB for improved IWB [40]. High OCB levels potentially boost the team morale of members from different organisational units for a more unified, encouraging, trustworthy, and committed work setting. Past works Purwanto et al. [41] disclosed that OCB impacted IWB among Malaysian manufacturing employees, whereas Suwanti and Udin [42] documented no OCB-IWB link among Indonesian banking employees in cross-functional roles and association with markets or customers. Arguably, OCB may vary across contexts. The third and fourth hypotheses were developed to fill this gap.

**H3.** There is a positive significant relationship between OCB and employees' IWB.

**H4.** The relationship between HAW and IWB is mediated by OCB.

## 5. Organisational innovative culture (OIC)

As a set of beliefs and ideas that enhance organisational creativity and develop an innovative context that accepts new ideas and responsiveness in decision-making Valencia et al. [43], innovative culture could be internalised in terms of attitudes toward innovation, technology, knowledge-sharing, entrepreneurial activities, businesses, and ambiguities [44]. Summarily, OIC denotes deep-rooted beliefs and values of innovation. Companies with a strong OIC strive to execute novel concepts, take risks, and promote innovations [45].

The inventive culture-innovativeness link has been examined in previous studies. Creative cultures enable companies to introduce new goods, services, or processes [46]. Organisations are encouraged to establish a foundation for innovation in fine-tuning company operations and developing a conducive culture for these establishments to navigate through periodic shifts and sustain innovation. Innovative cultures constitute a dominating matrix that catalyses organisational innovativeness to develop creativity beyond formal or regular standards. Creative cultures that promote innovativeness potentially encourage employees to maintain high work quality, optimise the development of novel goods and processes Mohamad et al. [47], and focus on the significance of empowering creative employees who are capable of acquiring new skills from the aforementioned developments. Based on Piwowar-Sulej [48], organisations must practice a culture that recognises their workers as positively acknowledging marginalised employees could render human resource policies effective [49]. The fifth and sixth hypotheses were developed as efforts to establish an inclusive culture potentially mitigate negative stereotypes encompassing groups that are highly unlikely to achieve IWB.

**H5.** The OIC moderates the relationship between HAW and IWB.

**H6.** The OIC moderates the relationship between OCB and IWB.

## 6. Research design

This study employed a quantitative approach based on the proposed research framework. The PLS-SEM was utilised to test and analyse the research model and data, respectively, and examine the direct and indirect relationships within different variables. Essentially, the structural questionnaire functioned as the study tool for primary data gathering. The questionnaire entails two sections. Section one is designed to obtain respondents' demographic profiles, such as control variables: gender, age, educational background, and tenure in the university. As presented in Table 1, the nominal scale served to assess the demographic attributes. Meanwhile, section two entails items that evaluate multiple constructs: HAW, OCB, IWB, and OIC. Happiness was assessed through three sub-constructs (EE, ES, and OC), while work engagement was evaluated through nine items adopted from Schaufeli, Bakker and Salanova [50]. The survey respondents were requested to rate their work engagement, "At my work, I feel bursting with energy", with a seven-point Likert scale to evaluate work engagement rating from (1) never to (7) always. A pilot study and reliability test were performed upon omitting one item at 0.804 ("I am immersed in my work"). The remaining scale items proved internally consistent and reliable in measuring the work engagement construct.

Job satisfaction was assessed through six items adapted from Schriesheim and Tsui [51]. The survey respondents were asked to rate their job satisfaction, "I am satisfied with the work I do", with a seven-point Likert scale ranging from (1) totally disagree to (7) strongly

**Table 1**  
Demographic characteristics.

DEMOGRAPHIC VARIABLES		FREQUENCY	VALID (%)
AGE	51–59	21	5%
	41–50	104	27%
	31–40	133	35%
	26–30	125	33%
GENDER	Male	186	49%
	Female	197	51%
EDUCATION BACKGROUND	Master's Degree	79	21%
	PhD	304	79%
TENURE IN UNIVERSITY	1–5 Years	203	53%
	6–10 Years	102	27%
	Over 10 Years	78	20%

agree. Resultantly, the internal item consistency was relatively high at a Cronbach's alpha coefficient of 0.859. The test also indicated good reliability. Effective commitment was assessed through five items adapted from Allen and Meyer [52]. The survey respondents were asked to rate their affective OC, "I would be very happy to spend the rest of my career with this organisation", with a seven-point Likert scale ranging from (1) totally disagree to (7) strongly agree. A Cronbach's alpha coefficient of 0.825 implied a relatively high internal item consistency and good reliability. Furthermore, 16 items were adopted from Lee and Allen [53], to assess organisational work behaviour. The survey respondents were requested to rate their organisational work behaviour, "Show pride when representing the organisation in public", with a seven-point Likert scale from (1) totally disagree to (7) strongly agree. A Cronbach's alpha value of 0.928 denoted high internal item consistency. Five items were adapted from Park et al. [54], to evaluate OIC. For example, the survey respondents were asked to rate their OIC, "Employees are receptive to change", with a seven-point Likert scale from (1) totally disagree to (7) strongly agree. A Cronbach's alpha coefficient of 0.818 implied a relatively high internal item consistency with good reliability. Lastly, nine items were adapted from Scott and Bruce [26] and Janssen [25] to measure IWB. The survey respondents were requested to rate their organisational work behaviour, "Show pride when representing the organisation in public", with a seven-point Likert scale from (1) totally disagree to (7) strongly agree. A Cronbach's alpha coefficient of 0.882 denoted a relatively high internal item consistency and good reliability.

## 7. Sampling

The respondents in this study encompassed lecturers from two public universities in Malaysia: Universiti Teknikal Malaysia Melaka (UTeM) and Universiti Tun Hussein Onn Malaysia (UTHM). In assuming that over 119 (the minimum sample size using G\*Power) lecturers would deliver accurate and comprehensive responses, 500 Erdfelder et al. [55] out of 1821 lectures were randomly selected from the university staff directory, an open website containing lecturers' profiles in each university. Self-administered questionnaires were digitally distributed to the 500 lecturers in December 2020. Precautionary measures, such as structuring the questionnaire online, performing random distribution, leaving the variables untitled, assuring respondents of their anonymity, not requesting any personal information, and seeking voluntary participation were undertaken to minimise self-reporting bias. Notably, online questionnaires reduced the possibility of missing data as respondents must address the entire questionnaire before submitting the answers. A total of 383 questionnaires out of the initial 500 were valid at approximately 64.2% [56]. Common method variance may occur in single-sourced data Podsakoff et al. [57] or a cross-sectional study design [58]. Consequently, Harman's one-factor test was employed to determine whether the data variance could be largely attributed to one factor. All the test items were loaded into one common factor. The total variance for the single common factor, which was under 50%, implied that common method bias did not impact the data [59].

### 7.1. Data analysis

The PLS-SEM served to measure the complex cause-effect relationship models with latent variables [60]. Essentially, comparing covariance-based SEM methodologies is deemed adequate to evaluate higher-order constructs and sophisticated conceptual models through mediation effects [60]. The PLS-SEM technique with Smart-PLS optimally assessed the causal-effect links presented in this model as the research sample exceeded ( $n = 383$ ).

## 8. Data analysis

### 8.1. Demographic characteristics

Table 1 summarises the study respondents' demographic profiles. Essentially, 197 (51%) of the 383 lecturers were women, while the remaining 186 (49%) were men. The high proportion of female participation results from their percentage in universities, which approximates their male counterparts. Furthermore, the Malaysian government motivates women (specifically academics) by appointing them to university leadership positions, such as in UTeM. This recognition further encourages them to share and participate in the study survey. Many respondents (35%) were between 31 and 40 years old, followed by counterparts between 26 and 30 years old (33%). Perceivably, most of the lecturers are young and may show interest in IWB. A majority of the respondents (79%) are PhD holders, while the remaining counterparts (21%) are Master's holders. Most of the individuals have experienced between 1 and 5 years

**Table 2**  
Reliability and validity.

Construct	Mean	SD	CA	CR	AVE
Citizenship	4.56	1.81	0.93	0.94	0.54
Innovative work behaviour	5.03	1.69	0.88	0.91	0.55
Job Engagement	4.54	1.82	0.80	0.87	0.58
Job Satisfaction	4.52	1.84	0.86	0.89	0.59
Organisation Commitment	5.15	1.59	0.83	0.89	0.74
Organisational Innovative Culture	5.17	1.74	0.82	0.88	0.65

Note: SD = Standard Deviation; CR = Composite Reliability; CA= Cronbach's Alpha; AVE = Average Variance Extracted.

(53%), followed by those with 6–10 years (21%), and counterparts over 10 years (20%).

## 8.2. Validity and reliability

The convergence validity, discriminant validity, construct reliability, and indicator reliability of the selected constructs were measured in the first SEM stage. Cronbach's alpha and composite reliability (CR) served to evaluate construct dependability (CA). The construct is deemed reliable with a CR value exceeding 0.07. The CR values in this research exceeded 0.07, which implied optimal CA (see Table 2). Subsequently, the dependability of the indicator was measured with CA ( $CA > 0.07$ ). The CA for all the variables proved adequate in line with the outcomes. Meanwhile, the construct convergent validity was measured with average variance extracted (AVE), which requires a value exceeding 0.50 [60]. All the current study constructs generated significant AVE, thus reflecting their convergent validity. Table 2 presents the CA, CR, and AVE values.

## 8.3. Discrimination validity

The Fornell and Larcker [61] criterion, cross-loading, and Heterotrait-Monotrait ratio (HTMT) were employed to measure the variable discriminant validity [60]. Essentially, the Fornell and Larcker criterion served to compare the square root of AVE retrieved from each concept against the construct correlation to assess discriminant validity. The cross-loading method subsequently measured the construct outer loading, which must exceed the corresponding construct loading for optimal discriminant validity. Tables 3 and 4 present the Fornell-Lacker and HTMT test outcomes, respectively. The cross-loading data are presented in Table 4. Values exceeding 0.85 implied high discriminant validity [62]. As all the construct loadings proved higher than those of other constructs, the construct discriminant validity was established. Lastly, discriminant validity was confirmed through the Fornell-Lacker criterion, which disclosed significant construct connections.

### 8.3.1. Path analysis

The structural model outcomes demonstrated a significant association between HAW driven by EE, ES, OC, OCB, and IWB (see Table 5). The civic engagement-creative work behaviour relationship also proved to be favourable. The OIC in the organisation reflected a favourable and significant effect on IWB. Table 5 summarises the effect size ( $f^2$ ) in this study with values ranging between 0.041 and 0.104. Hence, all the constructs reflected a negligibly minimal effect on employees' IWBs.

In Table 5, the HAW-IWB relationship at a 0.05 level of confidence proved significant. The  $b$  coefficient of HAW in IWB was estimated at 0.213 ( $p$ -value = 0.0001), thus supporting H1. Likewise, the HAW-OZB correlation was significant at a  $b$  coefficient of 0.2 ( $p$ -value = 0.002), hence supporting H2. The OZB-IWB relationship proved significant at a  $b$  coefficient of 0.233 ( $p$ -value = 0.0001), while employee citizenship behaviour highlighted a partial mediating effect on the ES-IWB link (see Table 5). The ES coefficient for IWB at 0.051 ( $p$ -value = 0.018) supported H4.

Despite the essentiality of HAW in employees' IWB, this relationship was impacted by OIC (see Fig. 2). An innovative culture could positively affect the aforementioned relationship by motivating workers to share creative ideas and solutions. This research also revealed the significance of innovative culture as a moderating variable. Notably, the moderating effects of innovative culture on the HAW-IWB and OIC-IWB links were assessed using a two-stage approach to evaluate the continuous moderating effects in PLS-SEM. Hair et al. [63] claimed that a continuous moderator variable potentially impacts the strength of the correlation between two variables and alters the relationship direction. A continuous moderator could be a general form of multi-group analysis. This research also performed the two-stage approach employed in PLS-SEM for the continuous moderator categorised under "high" and "low" groups. Hypothetically, a "high" level of OIC would positively moderate and strengthen the HAW-IWB link. The moderating effect value was further examined for significance through bootstrapping, which indicated significance at 0.05 level of confidence. Following Table 5, OIC reflected a significant moderating effect on the HAW-IWB correlation at 0.05 level of confidence ( $t$ -value = 2.113 and  $p$ -value = 0.035). The increase in OIC by one unit strengthened the HAW-IWB relationship by 12.4% (see Fig. 3), thus supporting H5. Additionally, OIC denoted a significant moderating effect on the OCB-IWB correlation at 0.05 level of confidence ( $t$ -value = 2.043 and  $p$ -value = 0.024). The OIC led to increase the relationship between OCB and IWB on OIC by one unit to 13%, thus supporting H6 (see Fig. 4).

**Table 3**  
Discrimination validity.

	OZB	IWB	EE	JS	OC	OIC
OZB	0.732					
IWB	0.394	0.74				
EE	0.169	0.318	0.758			
JS	0.122	0.252	0.711	0.768		
OC	0.319	0.426	0.144	0.102	0.861	
OIC	0.321	0.44	0.19	0.127	0.864	0.805

Note: EE = Employees Engagement; ES = Employees Satisfaction; OC = Organisational Commitment.  
IWB= Innovative Work Behaviour; OIC = Organisational Innovative Culture.  
OZB= Organisational Citizenship Behaviour.



**Table 4**  
Loadings and cross-loading.

	Citizenship	Innovative work behaviour	Job Engagement	Job Satisfaction	Organisation Commitment	Organisational Innovative Culture
EE1	0.184	0.227	0.792	0.483	0.120	0.146
EE2	0.141	0.282	0.837	0.579	0.146	0.203
EE3	0.157	0.211	0.807	0.533	0.132	0.168
EE4	0.142	0.298	0.808	0.572	0.119	0.172
EE8	-0.012	0.173	0.495	0.531	0.005	-0.005
ES1	0.024	0.117	0.395	0.621	0.021	0.012
ES2	0.112	0.206	0.502	0.816	0.122	0.118
ES3	0.060	0.113	0.480	0.801	0.028	0.035
ES4	0.118	0.212	0.634	0.814	0.057	0.110
ES5	0.116	0.204	0.600	0.805	0.128	0.126
ES6	0.114	0.287	0.628	0.735	0.101	0.159
IWB1	0.305	0.705	0.191	0.201	0.333	0.334
IWB2	0.261	0.754	0.244	0.209	0.293	0.313
IWB3	0.260	0.747	0.266	0.205	0.257	0.305
IWB4	0.309	0.802	0.238	0.126	0.333	0.369
IWB5	0.307	0.732	0.224	0.152	0.248	0.273
IWB6	0.300	0.727	0.172	0.104	0.440	0.417
IWB7	0.307	0.763	0.318	0.307	0.280	0.303
IWB8	0.276	0.684	0.230	0.181	0.326	0.275
OC2	0.280	0.332	0.121	0.100	0.837	0.752
OC3	0.265	0.378	0.129	0.084	0.878	0.811
OC5	0.278	0.391	0.123	0.081	0.866	0.665
OIC1	0.256	0.372	0.160	0.139	0.701	0.812
OIC2	0.249	0.367	0.197	0.132	0.773	0.829
OIC3	0.251	0.343	0.146	0.080	0.680	0.798
OIC4	0.280	0.332	0.105	0.051	0.620	0.779
OZB1	0.674	0.246	0.066	0.051	0.249	0.219
OZB10	0.706	0.251	0.097	0.059	0.162	0.191
OZB11	0.668	0.215	0.055	0.025	0.180	0.214
OZB12	0.716	0.254	0.104	0.062	0.192	0.207
OZB13	0.713	0.256	0.093	0.105	0.163	0.199
OZB2	0.789	0.330	0.159	0.090	0.284	0.293
OZB3	0.752	0.291	0.108	0.113	0.225	0.207
OZB4	0.785	0.344	0.128	0.122	0.289	0.277
OZB5	0.750	0.285	0.160	0.105	0.248	0.241
OZB6	0.654	0.304	0.138	0.031	0.203	0.210
OZB7	0.807	0.343	0.160	0.148	0.313	0.271
OZB8	0.778	0.344	0.181	0.101	0.279	0.289
OZB9	0.709	0.205	0.098	0.111	0.173	0.190

Note: EE = Employees Engagement; ES = Employees Satisfaction; OC = Organisational Commitment.

IWB= Innovative Work Behaviour; OIC = Organisational Innovative Culture; OZB= Organisational Citizenship Behaviour.

**Table 5**  
Path coefficients.

Path	Path Coefficient	t-value	p-value
H1: HAW -> IWB	0.213	4.170	0.000
H2: HAW -> OCB	0.2**	3.098	0.002
H3: OCB -> IWB	0.236***	3.756	0.000
H4: HAW -> OCB -> IWB	0.051*	2.38	0.018
H5: HAW x OIC -> IWB	0.124 *	2.226	0.026
H6: OCB x OIC -> IWB	0.130*	2.043	0.024

Note: \*\*\*p < 0.001; \*\*p < 0.01; \*p < 0.05 (one-tailed test);  $\beta$  = Path Coefficient.

## 9. Discussion

This research examined the HAW-IWB relationship through the mediating and moderating effects of OCB and OIC, respectively. The empirical outcome denoted significant and positive HAW-IWB, HAW-OCB, and OCB-IWB links, which supported H1, H2 and H3. Parallel to the study finding, HAW with regards to EE, affective OC, and ES potentially improved IWB in universities. In this vein, happy lecturers demonstrated optimal IWB. This finding corresponded to Khan and Abbas [1] who justified the HAW impact on employees' service innovative behaviour among the frontliners employed in the Pakistani service industry and Usai et al. [2], who proposed that happiness positively affected entrepreneurial initiatives in European nations. Based on the study outcome, happy employees tend to be motivated and engaged with work, which results in higher creativity and innovation levels. Such employees

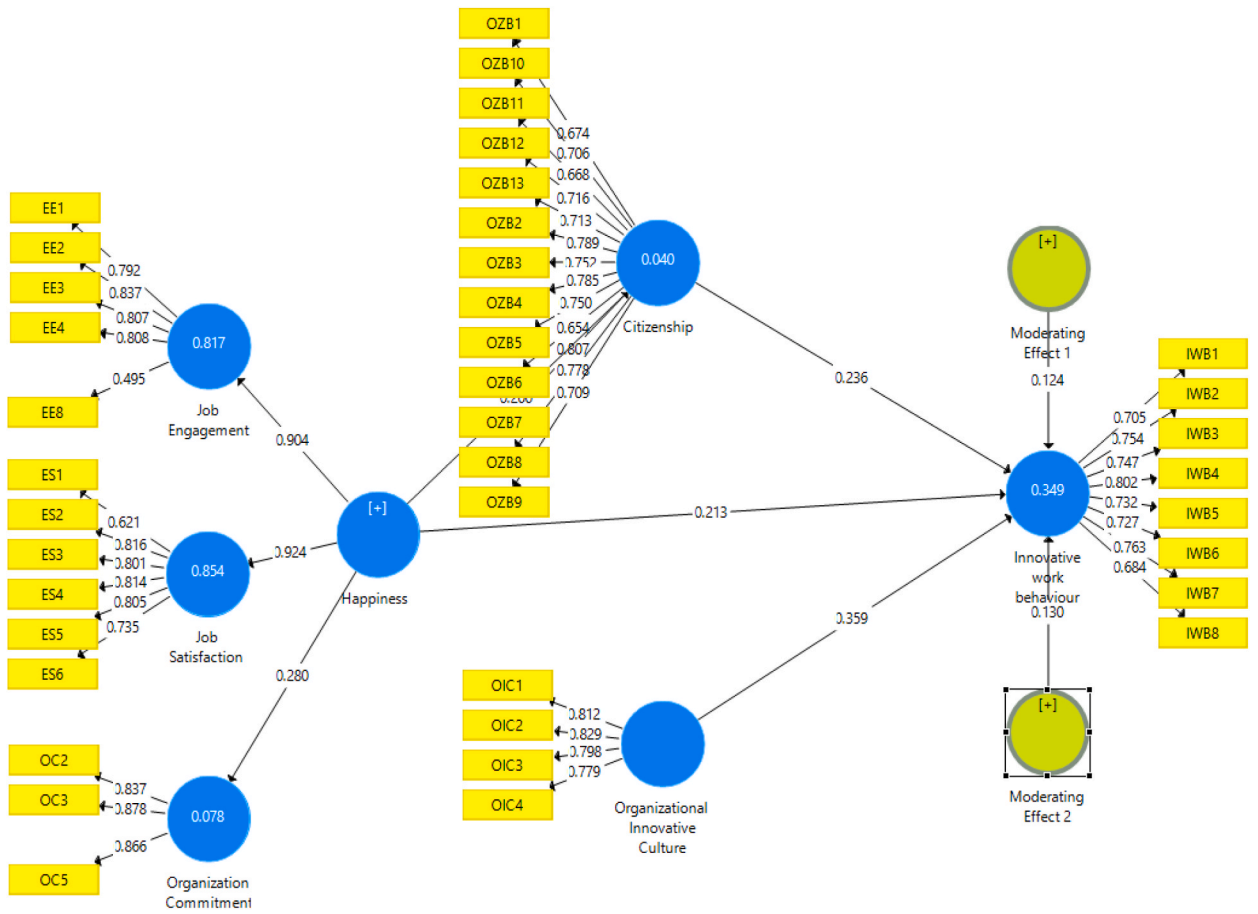


Fig. 2. Measurement model assessment.

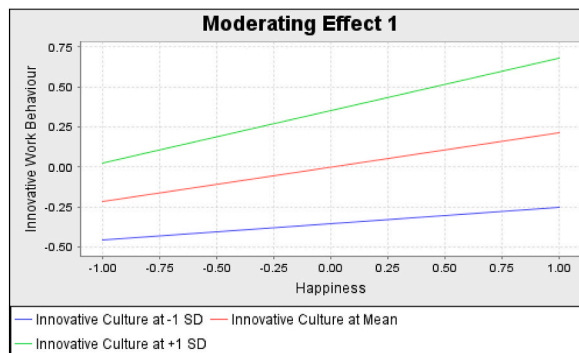


Fig. 3. Moderate effect of OIC on the relationship between HAW and IWB.

could also feel supported by their co-workers and supervisors, which fosters a positive and collaborative work environment that catalyses innovative thinking and experimentation. This constructive impact widens individual thinking and strengthens their psychological assets for healthier thought patterns and high capacities to tolerate and overcome adversities under the broaden and builds theory.

The study finding also affirmed that happy lecturers demonstrated high OCB by voluntarily sharing novel ideas and utilising their skills in line with the social exchange theory. Specifically, employees proved more dedicated and collaborative with fair treatment. This outcome paralleled that of Mousa et al. [64], who proposed that HAW positively influenced OCB among public hospital staff in Egypt, albeit contradicting Singh and Banerji [31], with no direct HAW-IWB link.

Engagement, job satisfaction, and emotional attachment to academics are frequently translated as passion, proactivity, persistence,



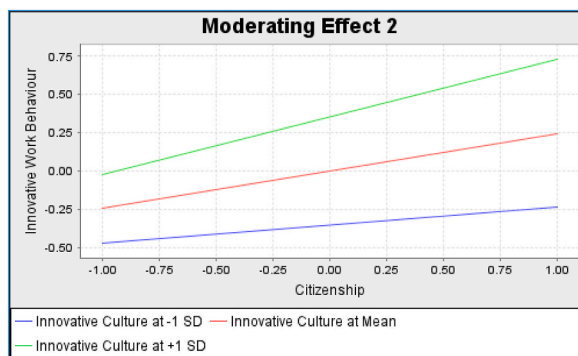


Fig. 4. Moderate effect of OIC on the relationship between OCB and IWB.

and affiliation for the betterment of the university, which justified the OCB mediation of the HAW-IWB relationship. The lecturers were satisfied with their workplace, work atmosphere, job description, and respect and fair treatment received from the organisation despite tangible and intangible variances. Such encouragements stimulated their voluntary efforts to assist co-workers, accept the working conditions, fulfil work prerequisites, mitigate professional conflicts, and experience a sense of belonging with the universities they work in.

The OIC moderated (i) the HAW effect on IWB, which supported H5, and (ii) the OCB effect on IWB, which supported H6. The essentiality of OIC depends on its significant role in motivating employees to generate novel ideas and engage them in creative activities. From the lecturers' perspective, the OIC in their university increased IWB. Risk-taking activities and the preparedness to embrace novel practices and techniques potentially improve lecturers' IWB in producing new concepts and enhancing the delivery of digital teaching.

Overall, local universities must internalise the significance of OIC in promoting innovativeness by moulding employees' behaviours and attitudes and organisational (university) values.

## 10. Conclusion

### 10.1. Theoretical contribution

Despite much research on the HAW effects at both individual and organisational levels, most of the studies emphasised their impact on employee performance, retention, or organisational performance. The current work pioneers the examination of the HAW-IWB relationship and catalyses organisational innovativeness in educational institutions. The research outcome extended the broaden and build theory with empirical evidence on how HAW significantly impacted employees' IWB through positive emotions and psychological resources. The findings also extended Ventegodt, Merrick, and Andersen's (2003) global model theory with a sound understanding of how HAW brings positive individual and organisational outcomes.

Second, this study contributed to the social exchange theory with novel evidence of the mediating effect of OCB on the HAW-IWB relationship. Notably, lecturers who are happy at work tend to engage in IWB, such as exploring unique teaching methodologies or developing novel research ideas. Hence, the mediating effect of OCB underscored the pivotal role played by a positive work environment in facilitating innovation in universities.

Third, this study is one of the rare empirical investigations that offer proof of how OIC potentially moderated the relationship between HAW, OCB, and IWB. This study area is crucial to inform organisations on the most effective strategies to encourage employees' creativity and innovation and emphasise the significance of prioritising employee happiness and well-being to facilitate workplace innovations.

Lastly, the current work proposed a model which suggests that HAW impacted IWB through the mediating effect of OCB. Specifically, happy employees tended to engage in OCB, which then promoted IWB. By examining the mediating role of OCB in the HAW-IWB relationship, this research provided a holistic understanding of the mechanisms underpinning this correlation, which expands the global model theory.

### 10.2. Practical implication

Empirically, workers' level of happiness substantially affected their OCB and IWB. In ensuring the boarding of individuals with high satisfaction, engagement, and dedication, relevant companies with innovative employee outcomes should develop a conducive working environment. Tertiary-level institutions should create strategies related to the three HAW constructs (affective commitment, job satisfaction, and work engagement) by developing their human capital. Emotions related to work engagement, pride, satisfaction, salary, and emotional bonding with co-workers in an organisation characterise employees as organisational citizens [31]. The mediating role of OCB with regards to IWB and HAW proves vital to this examination. Resultantly, the advantages of HAW catalysed Malaysian universities to promote such attributes among employees and foster employees' IWB.

The research outcomes implied that OCB complemented creativity and benefitted managers in developing an innovative workplace on a global scale. It is deemed pivotal for organisations to create optimal technology management initiatives with strategic planning processes [39]. As such, managers should elevate workers' OCB to improve organisational innovation and create a mechanism that boosts such behaviours apart from structural, collective, policy-oriented, and cultural interventions to support employee IWB. Practitioners should regard OCB as a significant individual-level predictor of IWB. As OIC impacted the interaction between HAW and IWB, universities are required to promote employee engagement, which increased a "participant's commitment to the new idea, making implementation more effective" [65] amidst high organisational ambiguity.

### 10.3. Limitation

This research encountered several limitations. First, the current work only surveyed the major local universities in Malaysia, which restricted its analysis to a specific industry. Thus, the empirical outcomes may not be pertinent and generalisable across other sectors, such as private universities. Second, a cross-sectional sample was employed in this study for data collection purposes. Bono and McNamara [66], highlighted the inappropriacy of employing cross-sectional data to test the hypothesis with causality, unlike longitudinal data. Regardless, the utilisation of cross-sectional data in this study was justified on the grounds that multiple studies on happiness and innovative behaviour have utilised the aforementioned data. Although this study has provided pivotal insights into the variable correlations, some limitations were encountered in establishing cause-and-effect relationships. It is rendered challenging to ascertain whether the observed HAW-IWB relationship results from cause and effect or other non-measured elements as cross-sectional studies do not follow participants over time. Hence, future studies should perform a longitudinal research design that tracks the same group of participants over an extended period.

### Author(s) contribution

Samer Ali Al-shami, Abdullah Al-mamun, Dr. Nurulizwa Rashid and Chew Boon Cheong; Conceived and designed the experiments; Contributed reagents, materials, analysis tools or data; Wrote the paper. Samer Ali Al-shami, Abdullah Al-mamun: Conceived and designed the experiments; Analyzed and interpreted the data; Wrote the paper.

### Availability of data and materials

The original contributions presented in the study are included in the article/Supplementary Material, further inquiries can be directed to the corresponding author/s.

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### Declaration of competing interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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