

Bulletin of Business and Economics, 12(4), 602-609 https://bbejournal.com https://doi.org/10.61506/01.00181 Does Polychronicity Impact Innovative Work Behavior? The Role of Procrastination

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Abstract

The innovative work behaviors are essential because of developments in technology, society, economy, and changes in organizational structures. The study innovates by investigate the relationship between polychronicity and innovative work behaviour. It further examines the mediating role of procrastination in the relationship between polychronicity and innovative work behaviors. A survey conducted with 575 respondents confirm that polychronicity has a positive relationship with employee IWB by mediating role of procrastination. We discuss managerial implications, limitations, and future research directions. **Keywords:** Polychronicity; innovative work behaviour; procrastination, COR Theory, Self-determination Theory

1. Introduction

Over the past two decades, the world has been witnessed to the transformation in the global economy towards one that is more knowledge-focused service economy (Muzam, 2023; Ding & Liu, 2022). The new knowledge-focused service economy and the complex globalised environment require a heightened level of adaptability and innovation from organisations (Tsai, 2018; Azeem et al., 2021) as they are continually pushed and challenged by their rivals. Therefore, innovation is a fundamental characteristic exhibited by evolving, flexible, and competitive organisations (Ferreira et al., 2020; Clarke et al., 2016; Zhang et al., 2019; Audi et al., 2022). It is noteworthy that innovation is carried out by human (Yesil & Sozbilir, 2013; Audi et al., 2021; Ye et al., 2022), not by the organization itself. Hence, organizations must pay special focus to foster innovative work behaviour among their employees (Agarwal, 2014).

Employee IWB is all about developing, adopting, and implementing new ideas to products, services and processes (De Jong & Den Hartog, 2007). It plays a crucial role in aligning the business vision and models with the constant technological changes and dynamic business environment (Muchiri et al. 2020) because innovative employees are readily to accept the changes and try to resolve issues and improve the work (Janssen, 2000; Scot & Bruce, 1994). Research literature reveal personality (Woods et al. 2018), contextual characteristics, job characteristic (Kwon & Kim, 2020), organizational structure and climate (Musenze & Mayende, 2023; Shanker et al., 2017), leadership (Afsar & Umrani, 2020) are the most important determinants of employee IWB. Concurrently, polychronicity has emerged as an essential needed skill for nearly all contemporary occupations (Wu et al. 2019). It is because of the fact that polychronic confer a competitive advantage to their organization through their preference to execute numerous tasks concurrently. Simultaneously, they redirect their attention and focus towards ongoing matters rather than finishing a single task (Poposki & Oswald, 2010). Polychronicity has a positive effect on employee IWB (Yousaf et al., 2021). Moreover, employees in knowledge-intensive organisations must be both inventive and polychronic in order to provide the organisation with a sustainable competitive advantage.

Several scholars have investigated polychronicity in the knowledge-based service organizations (Yousaf et al., 2021; Anser et al., 2022; Mattarelli et al., 2015). The findings of their studies reveal that polychronicity stimulates procrastination among employees which affects their IWB (Haesevoets et al., 2022; Shin and Grant, 2021; Chauhan et al., 2020) either positively or negavtively. This study examines how the relation between polychronicity and employee IWB is by their procrastination. Thus, our research fits well with the current trend in the knowledge intensive sector that is trying to understand the employee polychronic attitude on the employee IWB.

The research study innovates in several ways. First, it addresses the need to study the positive impacts of polychronicity on employee IWB. Furthermore, our study hypotheses are based on conservation of resources (COR) theory (Hobfoll, 1989) and Deci & Ryan (1985)' self-determination theory (SDT), in accordance with previous research (Waheed et al., 2021; Yousaf et al., 2021; Chen, 2022; Howard and Cogswell, 2023). At present, only a few studies have examined the relationship between polychronicity and employee IWB particular variables, such as job embeddedness and decentralization (Yousaf et al., 2021), job engagement and functional flexibility between polychronicity and creativity (Waheed et al., 2021), employee resilience between polychronicity and creativity (Anser et al., 2022). To our knowledge, we are the first to investigate the extent to which the relationship between polychronicity and employee IWB is mediated by procrastination. Our findings might have far-reaching implication for employees working in knowledge intensive organizations. Finally, from a business practices standpoint, our results might be useful for managers in the service sector, by suggesting methods to enhancing polychronicity and promoting active (moderated) procrastination among employees for fostering employee IWB.

Our article structure is as follows. We, first, lay out the research model and the hypotheses we propose. Subsequently, we will progressively outline the methodology and results. Lastly, we address the findings, their implications, the limits of the study, and we purpose suggestions for future research.

2. Literature review

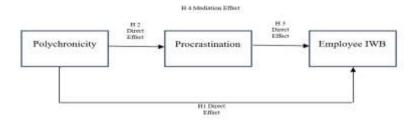
The aim of this study is to test the research model that is described in this section and is shown in Figure 1.

2.1. The direct impact of procrastination and employee IWB

According to COR theory, individuals work hard to get, safeguard, and hold on to resources, which may be defined as "those objects, personal characteristics, conditions, or energies that are valued (Hobfoll, 1989, p. 516). In accordance with the principle "resource investment" of COR theory, individuals spend their resources in order to build up resources so they may satisfy needs, achieve objectives, recoup from resource loss, or guard against more losses (Kiazad et al., 2015). Polychronicity is often regarded as personal resource as well as time resource (Asghar et al., 2021).

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And polychronic people are able to work with in highly interrupted work environment and thus they perform well while managing their work interruptions (Pachler et al. 2018; Weintraub et al, 2019). While IWB is concerned with the employee's intentional actions toward the promotion, generation and realization of novel ideas in order to perform workplace activities in a better way (Janssen, 2000; AlEssa et al., 2022). Researchers (Kapadia & Melwani, 2021) have found that working on multiple tasks can enhance creativity by recognizing problem statement from different perspectives. Moreover, when knowledge workers cannot manage to perform multiple assigned tasks at once, they try to introduce new ideas of work performance and attempt to implement these innovative ideas to perform multitasks simultaneously (Jang & George, 2012). In most cases, polychronicity leads to a decrease in the quality of service that is provided (Grobelna, 2021). Hence, in order to provide high-quality service, knowledge workers are consistently attempting to recognize and implement new work behaviours. Polychronicity pushes forward employees to adopt modern and newest methods rather than traditional patterns (Asghar et al. 2020). The empirical findings of Yousaf et al., (2021) reveals polychronicity as a strong driver of IWB among nursing profession. Therefore, we can purpose that polychronic knowledge workers adopt innovative work behavior to manage and complete their multiple tasks simultaneously.

H1: Polychronicity is positively related with employee IWB. The higher the polychronicity, the higher the employee exhibit IWB.

2.2. The direct impact of polychronicity and procrastination

According to COR theory, individuals experience heightened levels of stress when they are unable to sustain their resources (Hobfoll, 1989). Also, COR theory asserts that employees may be influenced to engage in undesirable and dysfunctional behaviours as a result of excessive pressure and difficult circumstances in order to protect oneself from further loss. Employees make an effort to acquire, hold onto, and develop financial, social, and personal valuable resources to safeguard them from stressful situations (Hobfoll et al., 2018). At present, due to the need for prompt completion and the erosion of task independence, employees are anticipated to complete a greater number of tasks within a shorter time frame (Kudesia et al., 2022; Szumowska & Kruglanski, 2022). Employee preference to do multitasking often are given a burden that increases in proportion, which in turn causes workers to distribute their time and energy among themselves, in accordance to COR (Hobfoll, 2001), resulting in slowing down the pace and accuracy of a task to be performed (Zhijie et al., 2022). Also, this may constrain their remaining time resources and impede their capacity to render a decision, resulting in procrastination. In other words, individuals who are required to engage in numerous activities at the same time have less resources available to them in terms of their remaining time, their capacity for self-regulation is restricted, and they are unable to properly control the pace of the tasks and result in procrastination (Xiaolong et al., 2021). Based on the COR, this study purposes following hypothesis:

H2: Polychronicity is positively related with employee's procrastination behavior.

2.3. The direct impact of procrastination and IWB

According to self-determination theory, employees who possess intrinsic motivation are inherently inclined to participate in a given task due to the gratification and rewards it provides (Ryan & Deci, 2000). Even employees, who are intrinsically driven, may put off completing a task if it seems too hard or stressful (Sirois, 2023) or if they find something else more intriguing (Ferrari et al., 1995). A number of scholars are of view that procrastination involves intentionally putting off important tasks until later, even while the person knows that putting them off would hurt them and people around them (Steel, 2007; Sirois & Pychyl, 2013). While some scholars (Shin & Grant, 2021; Zanjani et al., 2020) believe that procrastination is beneficial for building creativity and creative behavior among individuals. In accordance to Zhijie et al., (2022), when employees procrastinate, they are delaying the completion of a task that they see as potentially costly, but they may also be processing the assignment subconsciously or consciously which helps them to restructure the problem and activation of new knowledge. The problem restricting and activation of new knowledge help the employee to generate creative ideas. As we know, knowledge workers have to accomplish their tasks by implementing new ideas generating through procrastination provided that employees are involved in moderate procrastination, are intrinsically motivated and they have the opportunity to generate new ideas (Shin & Grant, 2021). Hence, we can purpose procrastination helps to foster creativity among knowledge workers, as they are working in knowledge intensive sectors, so they are well conscious about time and able to implement these creative ideas into implementation.

H3: Procrastination is positively related to employee IWB.

2.4. The mediating impact of procrastination on the relationship between polychronicity and employee IWB

Polychronic individuals tend to multitask and are comfortable with interruptions and frequent task switching, whereas, monochronic individuals tend to prefer sequential tasks and a linear workflow (Bluedorn et al., 1999). Polychronic people can easily handle switching between multiple tasks (Asghar et al., 2021). While procrastination is associated with putting off tasks. The knowledge workers preference for performing multiple tasks, put work-load on the employees which decrease the speed and efficiency of performing tasks, causing procrastination. When these employees procrastinate, they develop new and

innovative ideas for performing their tasks. Thus, procrastination of these employees leads them to be innovative at work to perform multiple jobs. Thus, we can formulate following hypothesis:

H4: Procrastination mediate the relationship between polychronicity and employee innovative work behavior.

3. Methodology

3.1. Research design and sampling

This research study used a cross-sectional design as well as quantitative methodology, as data had been obtained via survey questionnaires (online survey as well as field survey) from workers working in health, information technology and higher educational institutions. This study's research questionnaire was divided into two sections. The first section of the study incorporated respondent information pertaining to gender, age, educational, experience and profession. These variables were designated as control variables to facilitate a more comprehensive examination of respondent' contextual and background factors while the research questionnaire's second section was comprised of items that pertained to study constructs i.e., polychronicity, procrastination and IWB.

We collected data from respondents using convenience sampling. Since there are 29 items in the questionnaire, 290 samples would be needed (10:1 item ratio) (Randall & Gibson, 2013). The sample size for this study is 575 respondents in order to reduce sample error and avoid non-response (Bryman, 2016).

3.2. Measurement of variables

To ensure the generalizability of scales, we adapted pre-tested scales, The researcher modified previously validated scales to ensure the generalizability of the measures used. Moreover, all scales used in this study were rated on a seven-point Likert scale ranging from (1) Strongly Disagree to (7) Strongly Agree.

3.2.1. Polychronicity

The scale of individual level polychronicity was measured through a 7-point Likert scale developed by Poposki & Oswald (2010), "Multitasking Preference Inventory (MPI)". MPI is a scale used to measure individual level polychronicity. It is a 14item scale. It had been referred as "PCY=Polychronicity" in this study. An example of a sample item would be the following: "I would rather switch back and forth between several projects than concentrate my efforts on just one".

3.2.2. Innovative work behaviour

Scott and Bruce (1994)'s IWB scale was used to measure employee level IWB on 7-point Likert scale. It is a 6-item scale. It had been referred as "IWB=innovative work behavior" in this study. The example item is as follow; "I am innovative at work".

3.2.3. Procrastination

We adopted Sirois et al. (2019)' short version of Lay's General Procrastination Scale (GPS), which is consisted of 9 items, to measure procrastination. It had been referred as "PCN=Procrastination" in this study. The example of sample items include is: "I generally delay before starting work I have to do".

3.2.4. Control Variables

This research study has employed various employee-relevant demographic variables as control variable in order to achieve more accurate estimations. Among these demographic variables are respondents' gender, age, education, experience and profession.

3.3. Description of the sample and the research variable profile and quality

Descriptive analysis showed that more than fifty percent respondents were male respondents (n=329, 57%) while female respondents were (n=246, 43%). Half of the respondents (n=291, 50.5%) were between 18- 29 years. Most of the respondents hold bachelor (n=282, 49%) degree. Nearly half of the respondents (n=256, 45%) had 6-10 years of experience and mjrotrity of respondents were IT professionals (n=229, 40%). There was no evidence of common method bias in the current research study, according to the Harman single factor test (Podsakoff et al., 2003). All scale items load into a single latent variable that explains 34.99% of the total variance, below the 50% threshold, indicating no issue of common bias (Mattila & Enz, 2002). Furthermore, all the scales used to measure study variables displayed a Cronbach's alpha value exceeding 0.70 which indicated that each scale possessed satisfactory levels of internal consistency (Fornell & Larcker, 1981; Tucker, 1995).

Table 1: Descriptive statistics, internal reliability, and correlation (r)										
	Mean	SD	1	2	3	4	5	6	7	8
1. Polychronicity	3.34	.834	(.93)							
2.	3.42	.817	.392**	(.90)						
Procrastination 3. IWB	3.26	.840	.436**	.327**	(.85)					
4. Gender	1.42	.495	.034	.001	046	NA				
5. Age	1.69	.818	028	.049	051	.004	NA			
6. Education	3.57	.619	.012	$.099^{*}$	019	.026	.534**	NA		
7. Experience	1.96	.786	.055	.018	.044	.014	.071	.072	NA	

"*** $p \le 0.01$, *. $p \le 0.05$. The values reported in the parentheses forming a diagonal represent Cronbach's alpha (α)." "Gender: 1 = Male, 2 = Female"

"Age": 1=18-29, 2=30-39, 3=40-49, 4=50 & above

"Education": 1=Matriculation, 2=Intermediate, 3= Bachelor Degree/Master Degree, 4= Professional Qualification/MS/M.Phil.,

5=Post graduation qualification/PhD

"Experience": 1=0-5 years, 2=6-10 years, 3=11-20 years, 4=21-30 years

Notes: n= 575, PCY=Polychronicity, PCN= Procrastination, IWB: Innovative work behavior

The statistical results confirmed the significant correlation among the variables of the study. As expected, PCY was positively and significantly related to employee IWB (r = 0.436, p < 0.01). Moreover, it also revealed a positive and significant correlation with procrastination (r = .392, p < 0.01), and procrastination was also positively and significantly correlated with IWB (r = .327,

p < 0.01). The mean and standard values of PCY, PCN and IWB were 3.34 and .834; 3.42 and .817; 3.26 and .840 respectively. anxiety is also positively associated with turnover intention (r = 0.38, $p \le 0.01$). There are no significant relationships between all control variables (age, gender, experience, education level and profession) and all key variables. The majority of the participating employees are youthful with little seniority that could potentially explain why employees are more inclined to polychronicity and IWB, while displaying procrastinating behavior.

According to Anderson & Gerbing (1988), a measuring model must first be developed before the structural model can be tested. Three models have been presented in the Table 2. The 3 -factor model (in which all study variables are in each factor) demonstrated a satisfactory fit model ($\chi 2 = 526.388$, df = 340, $\chi 2/df = 1.548$, RMSEA=0.031, CFI=0.977, NNFI=0.974). Whereas single factor model (in which all study variables PCY, PCN and IWB were combined) indcated a poor fit model ($\chi 2 = 3365.047$, df = 344, $\chi 2/df = 9.782$, RMSEA = 0.124, CFI = 0.628, NNFI = 0.591). While 2-factor model (in which PCY and IWB in one factor, PCN in one factor) provided a better as compared to one-factor model but overall poor model fit ($\chi 2 = 1496.001$, df = 342, $\chi 2/df = 4.374$, RMSEA = 0.858, CFI=0.843, NNFI=0.077). Hence, we retained the proposed 3-factor model as it indicates the best fit values.

Table 2: Confirmatory Factor Analyses Results							
			Ratio				
Variables	χ2	df	χ2 / df	CFI	NNFI	RMSEA	
a- 3 factor model	526.388	340	1.548	0.977	0.974	0.031	
b- 2 factor model	1496.001	342	4.374	0.858	0.843	0.077	
c- 1-factor model	3365.047	344	9.782	0.628	0.591	0.124	

(1) 3-factor model) PCY, PCN, and IWB each in one factor

(2) PCY and IWB in one factor, PCN in one factor

(3) PCY, PCN, and IWB one factor

Where PCY=Polychronicity, PCN=Procrastination, IWB=Innovative work behavior

Finally, Table 3 depicts values of both Cronbach alpha and composite reliability are greater than 0.7. In Table 3, convergent validity (AVE ≥ 0.5) is proved. Moreover, Table 1 and Table 3 confirms the discriminant validity as the values of \sqrt{AVE} greater than construct correlation (Zait & Bertea, 2011).

		Т	able 3: Factor	r load	ing and scale validit	ies		
Variables	Items	El	FA (loading)		CFA (loading)	CR	AVE	Square root of AVE
Polychronicity	PCY 1	.719			.720	0.934	0.521	0.722
	PCY 2	.706			.712			
	PCY 3	.684			.685			
	PCY 4	.715			.741			
	PCY 5	.709			.725			
	PCY 6	.735			.755			
	PCY 7	.709			.738			
	PCY8	.739			.739			
	PCY9	.725			.716			
	PCY10	.740			.729			
	PCY 11	.729			.727			
	PCY12	.702			.707			
	PCY13	.706			.715			
	PCY14	.708			.689			
Procrastination	PCN1		.738		.737	0.907	0.519	0.721
	PCN2		.791		.781			
	PCN3		.715		.689			
	PCN4		.707		.700			
	PCN5		.722		.679			
	PCN6		.719		.705			
	PCN7		.743		.703			
	PCN8		.728		.722			
	PCN9		.731		.763			
Innovative work	IWB1			.764	.717	0.859	0.503	0.710
behavior	IWB2			.725	.699			
	IWB3			.746	.719			
	IWB4			.701	.658			
	IWB5			.746	.748			
	IWB6			.720	.713			

3.4. Data analysis

For testing the purposed hypotheses of this research study, we used the Statistical Package of social sciences (SPSS 22) and analysis of moment structures (AMOS 22) via the structural equation modeling (SEM). We tested the mediation effect through

the direct and indirect path (Iacobucci et al., 2007) using the bootstrapping technique (with 10,000 bootstrap samples and a confidence interval of 95%). We developed a structural model for analyzing and testing hypotheses. The results show that the model satisfied the criteria of good fit ($\chi 2 = 526.388$, df = 340, $\chi 2/df = 1.548$, RMSEA=0.031, CFI=0.977, NNFI=0.974).

4. Research Results

The result of our analysis, which tested the first three hypotheses, are shown in Table 4. Polychronicity is positively and significantly related to employee IWB (β = 0.341, p>0.01) which supports our purposed hypotheses (H 1). Furthermore, the results of this research study support H 2 which shows that polychronicity is positively and significantly related to procrastination behavior of employee (β = 0.412, p>0.01) and H 3 which stated that procrastination is positively related with employee IWB (β = 0.180, p>0.01).

Table 4: Structural Model Results								
Hypotheses	Hypothesized Paths	(β)	t-value	P-value				
H1	PCY→IWB	.341	7.641	***				
H2	PCY→PCN	.412	8.809	***				
H3	PCN→IWB	.180	4.210	***				
*** $p \le 0.01$, **. $p \le 0.05$.								
	Procrastination, IWB: Innovative work behavior							

Results in Table 5 confirm the purposed Hypothesis 4 of this study. As anticipated, the relationship between polychronicity and employee IWB is mediated by procrastination: polychronicity heightens the procrastination among employees and consequently increases their IWB (creativity and implementation).

Table 5: The me	ediating role of Procrastination	on (PCN)				
	Bootstrap BCa 95 % confidence intervals					
	Estimate	Lower	Upper	Р		
Relation between PCY and IWB	.341	.262	.426	.000		
Mediating impact of PCN	.074	.044	.109	.000		

BCa: bias-corrected and accelerated bootstrapping confidence intervals. Estimate based on 10,000 bootstrap samples. PCY=Polychronicity, PCN= Procrastination, IWB: Innovative work behavior

5. Discussion

Based upon COR and self-determination theories, this study explores whether the relationship between polychronicity and employee IWB is mediated by their procrastination behaviour or not. The results of this research study depict that polychronicity is positively and significantly related to employee IWB, as expected in Hypothesis 1. The result This outcome is in line with previous findings that confirm a positive relationship between polychronicity and employee IWB (Yousaf et al., 2021). Our study results confirm Hypothesis 2 which indicates that polychronicity is positively related with employee procrastination behavior (Zhijie et al., 2022). Furthermore, hypotheses 3 of this study is also confirmed which states that procrastination is positively related with employee IWB (Shin and Grant, 2021). In accordance with the predictions made in Hypothesis 4, procrastination mediates the relationship between polychronicity and employee IWB, hypothesis 4 is also confirmed. In other words, polychronicity enhances procrastination among employees which leads them to higher employee IWB at workplace.

6. Theoretical Implications

From a theoretical perspective, the results emphasise the need of using self-determinant theory and COR theory to investigate the polychronic employees' IWB at workplace while displaying procrastination behaviour. This study validates the significance of procrastination as personal resource to enhance the impact of polychronicity on employee IWB. As a result, this proves that the possession of resources at individual levels, as proposed by COR theory, provides advantages for employers seeking to attain a competitive edge (Barney, 1991). Moreover, our findings are consistent with self-determinant theory which stress that employees have inner motivation to complete their unfinished work.

7. Managerial Implications

The findings of this research have important repercussions for management in professional settings. First, our study results indicate that personnel with a preference for polychronicity can effectively engage in innovation activities (Yousaf et al., 2021) and contribute to the organizational innovation process (Chen, 2022). Polychronicity is the prerequisite of knowledge worker' s job and they often display procrastination behavior. The study confirms that employee polychronicity can lead towards procrastination and procrastination may induce employee turnover. The implications of our findings could potentially motivate policymakers and managers in the knowledge-based service sectors to implement tactics and strategies aimed at to promote polychronicity and employee IWB among their employee and to conduct self-regulation trainings to have better intentional as well as purposeful delay.

8. Limitations, future directions, and conclusion

Although the present study has interesting implications for both theory and practice, it also has some limitations that may serve as avenues for future research. First, this study employed a cross-sectional, self-reported data. Future research could use a longitudinal approach to collect multi-wave data and further examine the causal relationship. Additionally, longitudinal research aids in the eradication of common bias. Nevertheless, our research investigations have concluded that this common bias does

not constitute a significant concern in current study and we have confirmed it. Harman 's single factor test was performed to test for checking the vulnerability owing to common method bias arising from cross-sectional, self-reported data.

Second, our results cannot be generalized to the whole knowledge intensive sector and other countries as the current study was carried out on with relatively small number of knowledge workers working in Lahore, Pakistan. Knowledge workers working in other small cities might display different attitude. Moreover, we have caried out our research in service sector. Typically, industry conditions serve as a fundamental situational suppressor of the effects of diversity on IWB. Consequently, the findings thus far may lack generalizability to other sectors like manufacturing concern or non-profit organizations.

Third, it is possible that the association we investigated is influenced by some other exogenous factors than procrastination. Future research should concentrate on a wide variety of additional significant factors that determine employees' IWB, polychronicity and procrastination.

Based upon COR and self-determination theories, this study reveal that the relationship between polychronicity and employee IWB is mediated by procrastination behaviour. In conclusion, the findings of our study indicate that putting off work might occasionally be beneficial to creativity as well as employee IWB despite the fact that many workers battle with procrastination.

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