

Mental Model-Led Theory of Planned Behavior Application to Studying Organizational Citizenship Behaviors of Teachers and Administrative Staffs at Higher Learning Institutions

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Abstract

The study sets forth to present a theoretical model derived from the theory of planned behavior (TPB) that employs a critical missing concept, the “mental model” in the extant literature for applications to organizational citizenship behaviors (OCB). Mental models are represented by the engineer, community-building, visionary, and artistic elements, and wide variations are evidenced across different age groups and positions. The questionnaire survey provides means of data collection at two public higher learning institutions (HLIs) in Thailand, and structural equation modeling (SEM) statistics provides the empirical validation base for both theoretical and practical insights. Perceived job performance is shown as a significant mediator between the antecedent variables (namely, proactive attitude, the different dimensions of mental model, and transformational leadership) and OCB, which is outcome-oriented and is reckoned as more directional and impactful. The theoretical implication further connects the mental model-led TPB to the job demand-resource (JDR) model.

Keywords: theory of planned behavior, mental model, transformational leadership, job performance, organizational citizenship behavior

Introduction

The theory of planned behavior (TPB) is a popular conceptual framework for studying human behavior (Ajzen, 2001). TPB has a firm base of validity, which reckons that most human behaviors are under volitional control and can be effectively shaped by attitude, subjective norms, and perceived behavioral control (Ajzen, 2001). Organizational citizenship behavior (OCB) is no exemption. The extant literature shows many factors predicting OCB, such as learning culture and job satisfaction in transformational leadership (Idris et al., 2021). Rare is the research presents a

theory of planned behavior (TPB) conception in understanding OCB. TPB states that behavior is volitional, and can be robustly predicted from three constructs, i.e., attitude, social (or subjective) norm, and perceived behavioral control (Ajzen, 1991; 2001). At the least, two contributions are explicit. First, the mental model construct represents a social norm developed through group interaction. Second, the study adopts perceived job performance as a proxy for the actual control of the jobs performed by the employees and replaces perceived behavioral control as a mediator to impact OCB.

The mental model is a subject of psychology and cognitive science literature. Led by psychologist Kenneth Craik (1943), the researchers propose the mental model construct to assert that people do use some small-scale model (Jones et al., 2011) to interact with the environment and their duties (Jonson-Laird, 1983). Mental models are cognitive representations of the external reality (Steger et al., 2021), often associated with, for instance, beliefs and assumptions firmly held by individuals, groups or scientists (Zhou et al., 2021) or knowledge structure (Yrjola et al., 2018), and act as filters for decision makers' attention (van Ments and Treur, 2021), guides judgment, reasoning and problem solving (Doyle and Ford, 1988: 9). Thus, the social norm in its mental model form offers a mental bridge between the stimuli and behavioral responses (Rook, 2013). For instance, rather than managing animal health using the conventional mental model to treat adverse outcomes or trying to prevent them (e.g., morbidity, mortality, performance loss), veterinarians can alter their mental models, such as developing a wellness version that stresses wellness behaviors and not sickness behaviors of animals (Falkner, 2022). People may have been influenced by their mental models without conscious attention, for instance, in their cooperative or competitive behaviors toward others (van Ments and Treur, 2021). Mental models can be made explicit by mental representations of the world shared by social groups (Fernandez-Berrocal and Santamaria, 2006; Lynam and Brown, 2012). Despite the significant role of mental models in sciences, management and psychology, mental models have remained a largely unexplored area in business research (Yrjola et al., 2018), especially relating to organizational citizenship behavior (OCB), which this study attempts to contribute, by taking the higher learning institution (HLI) as an application context, and by conceptually linked to TPB.

Specifically, the research objective:

Employs TPB to conceptualize a mental model-led antecedent-mediator-behaviour model to predict OCB. The operationalization involves identifying the types of mental models that significantly influence OCB.

Two public universities in Thailand were surveyed, and their names remain anonymous.

Literature Review

The theory of planned behavior (TPB) is one of the major frameworks in psychology used to explain human behaviors in various domains (Alphonsa and Sia, 2022). TPB's universality in understanding human behavior has enabled researchers to adopt and combine other theories to expand the usage of TPB (Chan, Chong, and Ng, 2022). The application domains are multi-variegated, such as whistleblowing (Sarikhani and Ebrahimi, 2021) and employee involvement (Dawkins and Frass, 2005). This study adopts TPB to study organizational citizenship behaviors (OCB). Research efforts in the same direction adopt the same constructs as the original TPB, such as in Akterujjaman et al. (2021); their results imply that organizations that want to increase their environmental performance should consider PBC (perceived behavioral control), environmental attitude and subjective norms of the managers (p. 1). Differently, this study employs the mental model as a proxy to represent TPB's social norm (or subjective norm) and the reasons that perceived job performance is a significant representation of the PBC of employees. The TPB-led model is shown in Fig. 1, and the logic will be presented in the sequel.

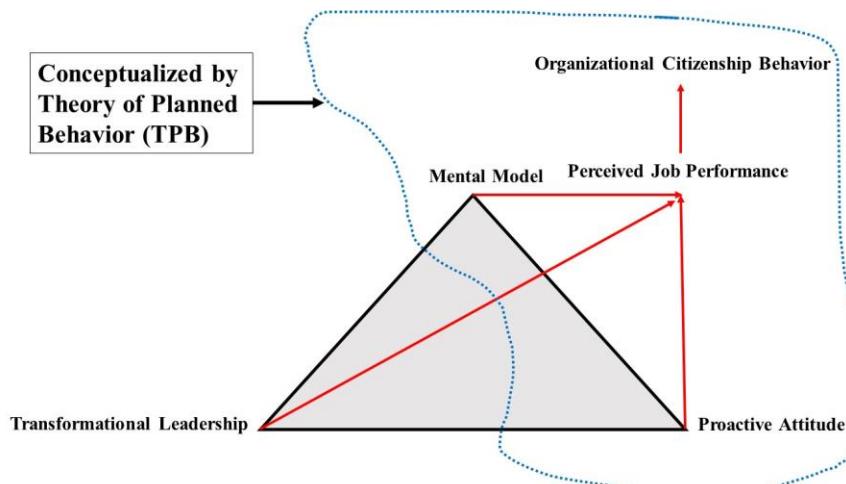


Fig. 1. The Theory of Planned Behavior (TPB) Guided Theoretical Model

Mental Models

From the TPB perspective, the mental model manifests subjective or social norms. Mental models can be cognitive representations of one's experiences, being internally integrated, which become the knowledge base for guiding decision-making (Craik, 1943; Kelly, 1963). The mental model could be complex concerning the implicit causal maps advocated in systems dynamics (Doyle and Ford, 1988). Organizations emphasize that mental models, as "deeply ingrained assumptions,

generalizations, or even pictures or images" (Senge, 1990: 175), are essential for organizational learning and competitive advantage. As mental models are often a firm grip on a belief system, a complete understanding would need at least to integrate the content and structure of the cognitive representations (McComb, 2007a).

Shared mental models have been shown to improve team performance (e.g., Marks, Zaccaro, and Mathieu, 2000), partly because people, under the influence of shared mental models, gain a greater understanding among team members regarding one another's needs and information requirements. McComb (2007b) argues that mental model convergence is a three-phase process whereby individuals first orient themselves to the team domain; then differentiate the disparate perspectives of the team members; and third, integrate these views into a team perspective (p. 105). As the three-phased process elapsed, the teams converged into a shared mental model, which forms an "organized knowledge framework" (Lim and Klein, 2006: 404) that allows the team to describe, explain, and predict behavior.

This study focuses specifically on organizational citizenship behavior (OCB). Knowledge of OCB can be traced to many disciplines, such as in political science, active citizens involve, for instance, obedience (e.g., respect for orderly structures and processes), serving the interests of the community as a whole and the values it embodies, and active and responsible involvement in community self-governance in whatever ways are possible under the law (Dyne, 1994: 767). Inherent in OCB could be a psychological contract as an individual's belief in a reciprocal obligation between the individual and the organization (Rousseau, 1989). The management sciences also treat OCB as essential to human organizational behaviours. Much research examines the antecedent causes of OCB, such as transformational leadership (Lopez-Dominguez et al., 2013) and supportive supervisors (Kaur and Randhawa, 2021).

Thus, the following hypotheses were developed.

H1. The mental model positively influences organizational citizenship behavior.

Proactive Attitude

The term proactive is not generally used in the extant literature, but proactive personality and appropriate work engagement behaviors, in relevancy to proactive attitude, have shown to influence OCB (Sridadi et al., 2022).

H2. A proactive attitude positively influences organizational citizenship behavior.

Transformational Leadership

The theory of planned behavior guides the inclusion of two constructs, namely, mental model and proactive attitudes. Transformational leadership is provided as it has been shown to effectively promote levels of employee engagement and commitment (Duan et al., 2022). On the other hand, an essential attribute of transformational leadership is the leader's ability to inspire a shared vision to lead (Bunjak, Bruch, and Cerne, 2022), which, as Fig. 1 aims, can accelerate the internalization of the knowledge structure presented as a mental model (Liao and Yi, 2021). Compared with traditional transactional leadership, transformational leadership is more capable of inspiring subordinates' intrinsic motivation (Mi et al., 2019) and, thus, more capable of leading to transformations in followers – i.e., changes in their behaviors and, consequently, their attitudes and performances (Bakker et al., 2022). It is part of the intrinsic motivation that motivates organizational citizenship behaviors related to company sustainability efforts (Kim et al., 2020).

Consequently, this study proposes the following hypothesis:

H3. Transformational leadership positively influences organizational citizenship behavior.

The mediation role of perceived job performance is a role taken by PBC in the theory of planned behavior. The concept of TPB indicates that perceived job performance contributes to the theory by providing information on the job performance status of the employees, enacted as the knowledge base to explain the OCB of employees. The following hypothesis, H4, is thus:

H4. Perceived job performance positively influences the OCB of the employees.

Method

Sample and Procedures

Data were collected for more than one month in 2020 by the first author, with the assistance of the students. The survey obtained the consensus of the respondents, agreed upon for anonymity in the report. The original sample target was 334 for a staff population of approximately 2,000 based on the Slovin formula, $n = N/(1+Ne^2)$.

To verify the hypotheses, the authors have adopted a quantitative survey. The method was chosen because of both the speed of obtaining data for analysis and the low cost of the study (Ziemianski et al., 2021).

Research Instrument

The items used to measure all the constructs were developed by the authors. For the four elements of the mental model, this study adopts the concept of a qualitative study by Yrjola et al. (2018). They interviewed the top executives and concluded a mental model archetype structure shown in Table 1. Four mental models are “the engineer,” “the community-builder”, “the visionary,” and “the artist”. Yrjola et al. (2018) reckon that in a business environment, the mental model can be either “inside-out” (begin with internal or firm focus, such as the current resources, products, strengths and capabilities of the company, *ibid*, p. 533) or “outside-in” (which takes the market as the starting point for strategic focus) in orientation. The rational can be either “rational” or “emotional”.

Table 1. The Mental Model Archetypes for Executives

Mental Model Orientation	Rational	Emotional
Inside Out	The Engineer	Community-builder
Outside In	The Visionary	The Artist

Accordingly, the measurement items are given below:

Engineers – 1. Our university carefully thinks through the programs and services offered to the students to give students efficiency-driven values. 2. We carefully streamline the process to deliver our students and staff the best values. 3. We always follow specific standard procedures in designing an educational system.

Community-building – 1. Our organization always works in teams to design education values for our students. 2. Each of our educational service designs always has a leader in the team facilitation. 3. When creating new educational services, the staff’s opinions are a priority.

Visionary – 1. Our organization always uses the information to identify what we can significantly improve student relationships and our operations. 2. We analyze marketing trends to improve our educational services before launching in the market. 3. We are concerned about other university performances to improve our educational services.

Artist – 1. Our products and service design aspiration are driven by achieving students’ satisfaction. 2. We always use teacher evaluation to give us a new perspective on our educational service design. 3. The value we propose to our students very much has the personal touch of the students.

As proactive attitude is a general construct, the authors review many proactive traits and behaviors in the extant literature (e.g., Nakano and Yamori, 2021), including concepts such as proactivity (Uy et al., 2015). The measurement items are 1. I always look for better solutions. 2. I excel at identifying new opportunities. 3. I am constantly looking for new ways to improve my life.

Transformational leadership

Instrument design for transformational leadership adopts the concepts discussed in Bakker et al. (2022), Bunjak et al. (2022), and Duan et al. (2022). Items: 1. My supervisor encourages our development to provide the best service to our students and relevant stakeholders. 2. My supervisor fosters trust, involvement and cooperation among us to ensure team members will provide the same standard of services to our students and relevant stakeholders. 3. My supervisor encourages thinking about problems in new ways and questions assumptions to create the best solution for our organization.

Perceived job performance

The concept of job performance perception adopts the discussed contents in Igbaria and Shayo ((1997). Items: 1. I perceived that I have a good relationship with the students. 2. I think I have delivered the services to the best I can to meet the needs of the students. 3. I think I have performed my job at the university to the requirement.

Organizational citizenship behavior:

OCB adopts the concepts from Akterujjaman et al. (2021), Kim et al. (2020), and Mi et al. (2019). Measurement items are 1. Concerning my work at the university, I attend functions that are not required, but that help the university's image. 2. Concerning my work at the university, I often offer ideas to improve the university's functioning. 3. Concerning my work at the university, I take action to protect the university from potential problems that could arise.

Result

The data received from the two public higher learning institutions (HLIs) totalled to 512. The demographic profiles and percentages will be presented in the sequel. The male has 38.7% of the responses, and the male at 61.30%. Other demographic variables are considered as nationality, age, and position.

Reliability, convergent and discriminant validity were assessed to conform to the acceptance criteria (Lee, 2019), as shown in Table 2, that the square root of the total variance explained (TVE)

above the cross-correlation term secures discriminant validity, and $TVE > 0.5$, factor loading for each measurement item of the construct > 0.60 secures convergent validity. Reliability is robust, as shown by the Cronbach alpha > 0.80 thresholds (Hair et al., 2014). A total of 512 valid responses provided the base of the statistical analysis of this study.

Table 2. Quality Assessment

	Factor Loading	Alpha	KMO	TVE	V1	V2	V3	V4	V5	V6	V7	V8
V1	(0.83,0.86,0.89)	0.82	0.73	0.73	0.85							
V2	(0.87,0.9,0.85)	0.85	0.718	0.77	0.45	0.88						
V3	(0.88,0.89,0.84)	0.85	0.71	0.76	0.46	0.42	0.87					
V4	(0.88,0.86,0.82)	0.81	0.7	0.73	0.4	0.39	0.68	0.85				
V5	(0.83,0.88,0.87)	0.83	0.71	0.74	0.37	0.3	0.61	0.67	0.86			
V6	(0.83,0.84,0.87)	0.81	0.7	0.73	0.45	0.4	0.62	0.68	0.69	0.85		
V7	(0.86,0.88,0.88)	0.84	0.72	0.76	0.44	0.41	0.51	0.51	0.54	0.48	0.87	
V8	(0.83,0.86,0.83)	0.8	0.71	0.72	0.61	0.48	0.64	0.58	0.6	0.61	0.66	0.85
Threshold	>0.6	>0.8	>0.6	>0.5	Sqrt(diagonal) > Cross-correlations							

Note: **V1** = Proactive attitude, **V2** = Transformational leadership, **V3** = Engineer, **V4** = Community-Building, **V5** = Visionary, **V6** = Artistic, **V7** = Perceived job performance, and **V8** = Organizational citizenship behavior.

The hypotheses were supported with the structural equation model presented in Fig. 2. The SEM statistic fits are: GFI = 1.000, AGFI = 1.000, NFI = 1.000, RFI = 1.000, IFI = 1.000, TLI = 1.012, CFI = 1.000, RMSEA = 0.000, $p = 0.892$ (absolute model fit for $p > 0.05$), $\chi^2/\text{df} = 0.019$, thus, meeting the threshold criteria for both absolute and incremental fit. H1 – the mental hypothesis – is supported by the ranking in the sequence, represented by the path coefficient: “The engineer” (0.19), followed by “visionary” (0.12), artistic (0.11), and community-building (0.01). H2 has a significant path coefficient of 0.26. H3 is very weak at 0.07 of the path coefficient between transformational leadership and OCB. The mediator role of perceived job performance is significant, judging by the path coefficients, first, between the antecedents and perceived job performance, and the path coefficient between perceived job performance and OCB. All the numbers are presented in Fig. 2.

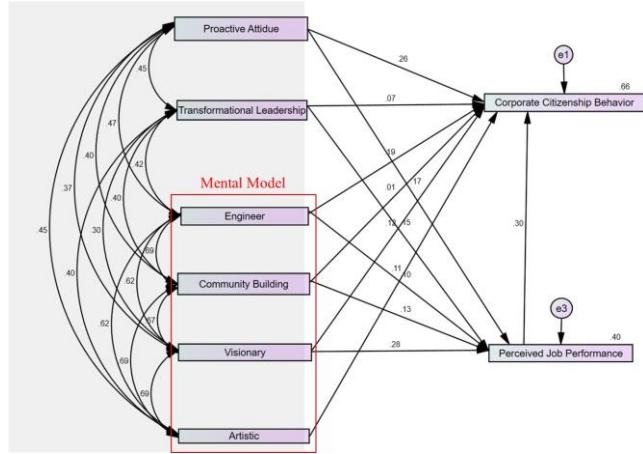


Fig. 2. The Empirical Structural Equation Model (SEM)

Results of the comparative demographic analyses are given in Table 3, Fig. 3 and Fig. 4. Significant differences are found in gender, age, and positions. The female staff generally have a higher level of response across the board.

Table 3. Comparative Demographic Analysis

	Demographic	Freq	%	V1	V2	V3	V4	V5	V6	V7	V8	
	Male	198	38.70%	3.93	3.91	3.69	3.63	3.54	3.78	3.98	3.78	
	Female	314	61.30%	3.96	3.86	3.96	3.97	3.8	4.06	3.73	3.94	
				Sig. (2-tailed)	0.580	0.406	0.000	0.000	0.000	0.000	0.009	
				t	-0.55	0	-4.2	-5.4	-3.9	-4.7	-3.7	-2.62
	Thai	468	91.40%	3.96	3.87	3.85	3.85	3.7	3.96	3.64	3.87	
	Non-Thai	44	8.60%	3.84	4	3.87	3.75	3.69	3.78	3.54	3.87	
				Sig. (2-tailed)	0.3	0.16	0.86	0.39	0.92	0.91	0.38	0.99
				t	1.02	-1.38	-1.75	0.84	0.09	1.69	0.86	0
Age	20-30	154	30.10%	4	4	3.91	4	3.8	4.12	3.6	3.92	
	31-40	240	46.90%	3.89	3.8	3.84	3.79	3.7	3.88	3.64	3.86	
	41-50	108	21.10%	3.93	3.84	3.8	3.74	3.64	3.9	3.62	3.8	
	≥ 51	10	2%	4.53	3.86	3.86	3.53	2.93	3.4	3.93	4.33	
Position				F	3.23	3.39	0.51	4.44	4.94	6.4	0.66	2.45
				Sig.	0.020	0.002	0.670	0.004	0.002	0.000	0.577	0.063
	Lecturer	196	38.30%	3.91	4	3.76	3.84	3.74	3.94	3.68	3.92	
	TA,RA	44	8.60%	3.89	3.56	3.37	3.65	3.43	3.95	3.31	3.5	
	Adm. Staff	252	49.20%	3.97	3.8	4	3.92	3.77	4.01	3.67	3.93	
	Researcher	20	3.90%	4.06	4.44	3.33	3.26	3.13	3.26	3.4	3.6	
				F	0.6	10.6	18.2	6.9	6.8	7.7	4.1	7.3
				Sig.	0.610	0.000	0.000	0.000	0.000	0.007	0.000	

Fig. 3 presents the differences across ages, which depicts the wide variations between the “20-30” age and “above 51” age group. The “20-30” shows the highest level for the antecedents except for perceived job performance and OCB, and the trend is opposite to the “above 51” age group.

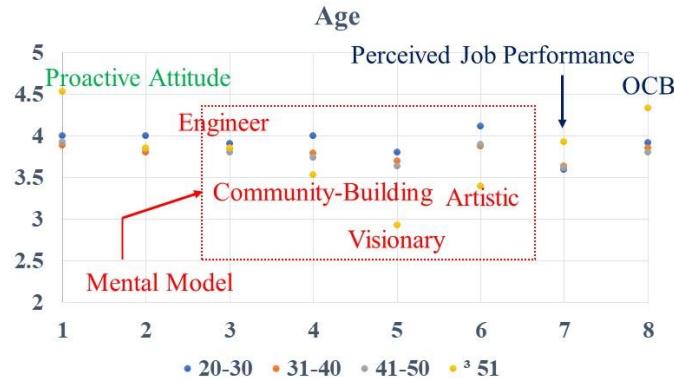


Fig. 3. Construct Profiles across Ages

Fig. 4 presents the construct differences across positions. Researchers have the most proactive attitude and transformational leadership perceptions, but the perceptions of the remaining constructs remain at the minimum compared to the administrative staff.

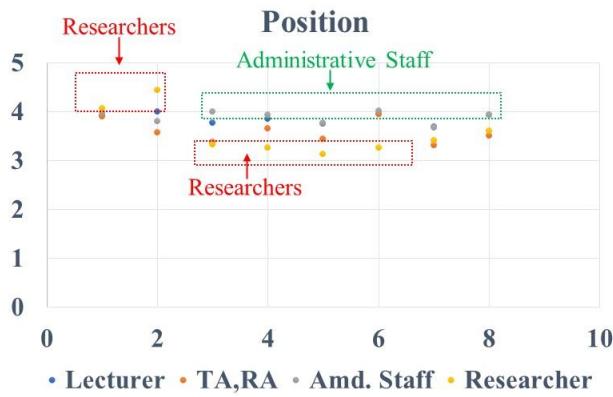


Fig. 4. Construct Profiles across Positions

Discussion and Conclusion

The present study aimed to validate the applicability of the theory of planned behavior in understanding organizational (corporate) citizenship behavior of teaching and administrative staff at higher learning institutions.

The TPB-conceptualized model that interrelates the antecedents (mental models, proactive attitude, and transformational leadership) to OCB via perceived job performance forms the core of the theoretical contribution. As a mediator, perceived job performance is a more potent force to bring the antecedents to bear fruit on OCB. The logic of TPB can infer upon OCB many relevant terms such as actionable knowledge or perceived behavioral control of the employees (Aitken et al., 2020). In addition, the antecedents can be reckoned as the job resources that can effectively help them better cope with the job demands. Thus, future research can employ the JD-R model

(Demerouti and Bakker, 2011; Li and Wang, 2022) and extend it to include demand-oriented variables. The study could investigate the balanced or aligned job demands and resources contributing to OCB.

The results imply that in whatever measures or practices an institution or organization attempts to apply, such as transformational leadership and a shared mental model, it is essential to ensure the employees can perceive that they do perform. In other words, the institutions and the managers should support the performance of their staff. Thus, perceived job performance is more outcome-oriented and channels the efforts in a beneficial direction to the organization. From the lens of TPB, job performance is a PBC, also signifying employee readiness (Chen and Silverthorne, 205).

Limitation

This study is cross-sectional, but research on the mental model reveals that time and team size would enhance the effect of shared mental models on task effectiveness (Xiao and Jin, 2010). Further research could employ qualitative research and consider the time, team size, and other related factors.

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