

Analyzing the effectiveness of Team Behaviour using TPB model in IT Sector

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Abstract

Purpose – The purpose of this study is to examine the effectiveness of team behaviour using the Theory of Planned Behaviour (TPB) model, which states that attitudes, subjective norms, and perceived behavioural control influence individual intentions to engage in a certain behaviour. This study adopts a comprehensive research technique to evaluate the elements that influence team members' intentions to exhibit cooperative behaviour within their individual teams.

Design/methodology/approach – The study was carried out using the advanced framework of behavioural model. The questionnaire was prepared and distributed among 371 employees working in an IT sector. The population was selected using stratified random sampling.

Findings – While analyzing the TPB factors with Team Behaviour, the findings confirm that the factors have a strong and positive impact on behaviours of employees within the team. It is also noted that the age and experience have a significant relation with attitude and subjective norms.

Research limitations/implications – The study focuses only on employees working in IT sector at Technopark, Trivandrum area instead of focusing on other locations. Also, the study focus only on the behavioral perspectives of employees towards team dynamics eliminating another side's perspective.

Originality/value

This study provides a unique approach on how TPB can be used to better understand and improve team dynamics in a technological-driven environment. Managers can adopt training programs, strategy to enhance project outcomes, teamwork, and overall productivity by understanding how the TPB model can be employed to enhance and improve team behaviour.

Keywords: Team Behaviour, Theory of Planned Behaviour, Attitude, Subjective Norms, Perceived Behavioural Control

Introduction

In today's interconnected and changing world, working in teams is the cornerstone of success in every sector, including business, healthcare, education, and, notably, the Information Technology (IT) industry. Understanding the dynamics of team behaviour and its effectiveness has become vital for organisations that seek to succeed and innovate. To better understand and optimize team behavior in this context, organizations are turning to

psychological models like the Theory of Planned Behavior (TPB). This model offers a structured framework for analyzing the factors that influence team behavior, encompassing attitudes, subjective norms, and perceived behavioral control. By delving into these components, organizations can gain valuable insights into the dynamics of their teams, identify areas for improvement, and implement strategies to enhance collaboration and productivity. In this exploration, this study examines the significance of analyzing team behavior using the TPB model within the IT sector, shedding light on its potential to drive success in this rapidly evolving industry.

Literature Review

Theory of Planned Behaviour

The theory of planned behavior is an extension of theory of reasoned action (TRA) and was developed by Ajzen (1991). It comprises of attitude towards the behavior, subjective norm (SN) and perceived behavioural control (PBC) (Ajzen, 1985, 1991). According to the theory, an individual's behavioural intention and behaviour are influenced by their attitude towards behaviour, subjective norms, and perceived behavioural control. As a general rule, the more favourable the attitude and subjective norm, and the greater the perceived behavioural control, the stronger should be the person's intention to perform the behaviour (Davis et al., 2002).

Attitude:

TPB defines attitude towards behaviour as the good or negative feelings an individual feels towards a specific behaviour (Ajzen and Fishbein, 1980). Chang (1998) defines attitude towards behaviour as a function of one's salient belief (B) about executing the behaviour and an evaluation of the consequences coming from the behaviour. According to research on the theories of reasoned action and planned behaviour, attitude is a reliable predictor of intentions and behaviour (Beck & Ajzen, 1991). Our attitudes express our thoughts and feelings towards specific things and social entities (Eagly & Chaiken, 1993). Similarly, when we engage in specific behaviours, we experience these thoughts and feelings (i.e., attitude towards the behaviour; Fishbein & Ajzen, 1975). Self-awareness and emotional intelligence highlight how individual attitudes can influence team behaviour, particularly communication and collaboration (Batista, E. (2015). The role of individual attitudes like self-awareness and self-regulation in affecting team behaviour and interpersonal relationships (Goleman, D. (1995). Team effectiveness emphasises the significance of task-related attitudes, such as shared goal

understanding, in influencing team coordination and performance(Hackman, R. J. (2002). Team design and composition are discussed as critical aspects in team behaviour , with an emphasis on how well-designed team structures can influence attitudes and behaviours within teams(Hackman, J. R., & Wageman, R. (2005)).

Subjective Norms:

The concept of subjective norms as an integral component of the model is explained in Ajzen's foundational work on TPB. Subjective norms indicate experienced social pressure to engage in a behaviour and are important predictors of intentions and behaviour(Ajzen, I (1991)). Subjective norms were discovered to be distinct entities that predicted individuals' intentions to engage in various behaviours, and these findings have substantial implications for norms-based theories and campaigns(Park, et al 2009). McGrath addresses how group norms, particularly subjective norms, influence team behaviour. It emphasises the impact of group dynamics and social influences on team norms and behaviours(McGrath, J. E. 1984). The Social Identity Theory developed by Tajfel and Turner investigates how individuals obtain their self-concept from group memberships and how this shapes subjective norms within teams. It explains how group identity and subjective norms influences team behaviour. Cameron and Quinn's Competing Values Framework examines how team culture and shared norms affect team behaviour. They highlight the importance of culture in developing subjective norms within teams (Quinn, R. E. (2011)). Cox's study on cultural diversity investigates how diverse teams may have distinct subjective norms as a result of cultural differences, influencing team behaviour and decision-making(Cox, T. (1994)).

Perceived Behavioural Control

Perceived behavioural control is described as a person's opinion of the ease or difficulty of carrying out the desired behaviour, given the presence or lack of necessary resources and opportunities (Ajzen, 1991).The whole set of control beliefs, that is, beliefs about the presence of circumstances that may promote or hinder behavioural performance, is used to assess perceived behavioural control. Researchers have discovered a link between perceived behavioural control and intention (Downs & Hausenblas, 2005). Agarwal and Prasad addressed how PBC influenced IT professionals' decisions to work in teams and on team behaviour. They discovered that enhanced perceived control resulted in increased teamwork

and collaboration in IT sector(Agarwal,R.&Prasad,J.(1999)). Kashif investigated the association between Perceived Behavioural Control and team behaviour in information

technology project management. According to his findings, IT project teams with a high PBC were more likely to accomplish project objectives and collaborate well (Kashif, M., Zarkada, A., & Ramayah, T. (2018)).

Team Behaviour

Hackman, J. R. (1987) emphasized the importance of both task-related and socio emotional aspects of team behavior. His model considers team behavior as the collective actions and interactions of team members aimed at achieving specific goals while maintaining a positive team atmosphere. Marks, M. A., Mathieu, J. E., & Zaccaro, S. J. (2001) created a model that takes into account team inputs (for example, member qualities), team processes (for example, communication, coordination), and team results (for example, performance). In this approach, team behaviour is inextricably linked to team procedures and how they influence outcomes.

3. Methodology

The current research is descriptive in nature and is based on primary data. The method of data collection is survey and the instrument used is questionnaire. The items in questionnaire were assessed using a 5-point Likert scale ranging from strongly disagree to strongly agree. To ensure the validity of the survey scale, the items were developed from relevant research and current literature to meet the study's concept and setting. The respondents of the survey were employees working at Technopark, Trivandrum. The systematic random sampling method was adopted to select the sample of 371 employees working at Technopark. A reliable and valid questionnaire has been used and the analysis was done with 371 complete responses.

The respondents' demographic profile is given in Table 1.

Table 1 Demographic Profile

Category	Subdivision	Frequency	Percentage
Gender	Male	270	72.8
	Female	101	27.2
Age	20-25 years	98	26.4
	26-35 years	212	57.1
	36-45 years	57	15.4
	Above 45 years	4	1.1
Monthly Income	<20,000	58	15.6
	20,001-30,000	118	31.8

	30,001-50,000	131	35.3
	>50,000	64	17.3
Qualification	UG	218	58.8
	PG	106	28.6
	Diploma	47	12.7
Experience	Below 2 years	89	24.0
	2-5 years	103	27.8
	6-10 years	124	33.4
	11-15 years	44	11.9
	Above 15 years	11	3.0

4. Data analysis and discussion

H₀: There is no significant difference between Age and attitude.

Table 2 Age and Attitude

Age	Mean	SD	F value	P value
20-25 years	3.42 ^b	.905	2.565	.035**
26-35 years	3.47 ^b	.920		
36-45 years	3.26 ^b	1.026		
Above 45 years	2.33 ^a	.471		

** Denotes significant at 5% level

Since P value is less than 0.05, the null hypothesis is rejected at 5% level of significance. Hence concluded that there is significant difference between Age and Attitude. Based on Tukey HSD test, the age group of 26-35 years of employees are having higher level of attitude towards their behaviours within the team due to a convergence of factors. At this career stage, individuals typically possess a blend of experience and youthful enthusiasm. They have had the opportunity to participate in various team settings, accumulating valuable insights into effective collaboration, communication, and problem-solving. This combination of experience and a keen desire for career advancement motivates them to take a proactive approach to team dynamics.

Table 3 Experience and Attitude

H₀: There is no relationship between experience and attitude.

Experience	Mean	SD	F value	P value
Below 2 years	3.51 ^b	.935	5.098	.001**
2-5 years	3.38 ^b	.916		
6-10 years	3.57 ^b	.860		
11-15 years	3.00 ^{ab}	1.052		
Above 15 years	2.70 ^a	.781		

** Denotes significant at 5% level

Since P value is less than 0.05, the null hypothesis is rejected at 5% level of significance. Hence concluded that there is significant difference between Experience and Attitude. Based on Tukey HSD test, employees with 6-10 years of experience are having higher level of attitude towards their behaviours within the team because they may have a clearer sense of their career goals and organizational culture, influencing their attitudes and actions as they seek to align with their long-term aspirations and the established norms.

Table 4 Experience and Subjective Norms

Experience	Mean	SD	F value	P value
Below 2 years	3.67 ^a	.806	2.402	.010**
2-5 years	3.46 ^{ab}	.938		
6-10 years	3.47 ^{ab}	.842		
11-15 years	3.27 ^{ab}	.930		
Above 15 years	3.03 ^b	1.038		

** Denotes significant at 5% level

Since P value is less than 0.05, the null hypothesis is rejected at 5% level of significance. Hence concluded that there is significant difference between Experience and Attitude. Based on Tukey HSD test, employees below 2 years of experience are having high score in subjective norms because they are newer to the job and also they might be more receptive to the opinions and advice of their more experienced peers, managers, and mentors, as they view these individuals as valuable sources of information and guidance in their efforts to fit in and succeed within the organization.

Relation between Attitude and Team Behaviour

Regression Analysis of Attitude and Team Behaviour

The Independent Variable is Attitude and the Dependent Variable is Team Behaviour. The R-value is 0.785^a and R square value is 0.616, the F value is 46.172 and the P value is 0.000.

Table 5 Attitude and Team Behaviour

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.908	0.153	0.785	18.952	.000
	Attitude	0.295	0.043		6.795	.000

a. Dependent Variable: Team Behaviour

The linear correlation coefficient is 0.785 measures the degree of relationship between the actual values and the predicted values of the Team Behaviour. Because the predicted values are obtained as a linear combination of Attitude, the coefficient value of 0.785 indicates that the relationship between Team Behaviour and the independent variable(attitude) is quite strong and positive.

The Coefficient of Determination R-square measures the moderate-of-fit of the estimated Sample Regression Plane (SRP) in terms of the proportion of the variation in the dependent variables explained by the fitted sample regression equation. Thus, the value of **R square** is 0.616 simply means that about 61.6% of the variation in Team Behaviour and is

explained by the estimated SRP that uses attitude as the independent variable and R square value is significant at 1 % level.

The linear regression equation is

$$Y = 0.295X + 2.908$$

Where X- attitude, Y- Team Behaviour

Here the coefficient of X is 0.295 represents the effect of attitude on Team Behaviour. The estimated positive sign implies that such effect is positive that Team Behaviour making would increase by 0.295 for every unit increase in attitude and this coefficient value is significant at 1% level.

Relation between Subjective Norms and Team Behaviour

The Independent Variable is Subjective Norms and the Dependent Variable is Team Behaviour. The R-value is 0.712^a and R square value is 0.506, the F value is 86.320 and the P value is 0.000.

Table 7 Subjective Norms and team behaviour

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.496	.157		15.849	.000
	Subjective Norms	.408	.044	.712	9.291	.000

a. Dependent Variable: Team Behaviour

The linear correlation coefficient is 0.712 measures the degree of relationship between the actual values and the predicted values of the Team Behaviour. Because the predicted values are obtained as a linear combination of Subjective Norms, the coefficient value of 0.712 indicates that the relationship between Team Behaviour and the independent variable(subjective norms) is quite strong and positive.

The Coefficient of Determination R-square measures the moderate-of-fit of the estimated Sample Regression Plane (SRP) in terms of the proportion of the variation in the dependent variables explained by the fitted sample regression equation. Thus, the value of **R square is 0.506** simply means that about 50.9% of the variation in Team Behaviour and is explained by the estimated SRP that uses subjective norms as the independent variable and R square value is significant at 1 % level.

The linear regression equation is

$$Y = 0.408X + 2.496$$

Where X- Subjective Norms, Y- Team Behaviour

Here the coefficient of **X** is 0.408 represents the effect of Subjective Norms on Team Behaviour. The estimated positive sign implies that such effect is positive and that Team Behaviour would increase by 0.408 for every unit increase in subjective norms and this coefficient value is significant at 1% level.

Relation between Perceived Behavioural Control and Team Behaviour

The Independent Variable is Perceived Behavioural Control and the Dependent Variable is Team Behaviour. The R-value is 0.796^a and R square value is 0.634, the F value is 133.13 and the P value is 0.000.

Table 8 Perceived Behavioural Control and Team Behaviour

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.961	.173	.796	11.316	.000
	Perceived Behavioural Control	.542	.047		11.538	.000

a. Dependent Variable: Team Behaviour

The linear correlation coefficient is 0.796 measures the degree of relationship between the actual values and the predicted values of the Team Behaviour. Because the predicted values are obtained as a linear combination of Perceived Behavioural Control(PBC), the coefficient value of 0.796 indicates that the relationship between Team Behaviour and the independent variable(PBC) is quite strong and positive.

The Coefficient of Determination R-square measures the moderate-of-fit of the estimated Sample Regression Plane (SRP) in terms of the proportion of the variation in the dependent variables explained by the fitted sample regression equation. Thus, the value of R square is 0.634 simply means that about 63.4% of the variation in Team Behaviour and is explained by the estimated SRP that uses PBC as the independent variable and R square value is significant at 1 % level.

The linear regression equation is

$$Y = 0.542X + 1.961$$

Where X- Perceived Behavioural Control(PBC), Y- Team Behaviour

Here the coefficient of X is 0.542 represents the effect of PBC on Team Behaviour. The estimated positive sign implies that such effect is positive that Team Behaviour making would increase by 0.542 for every unit increase in attitude and this coefficient value is significant at 1% level.

Result and Discussion

The analysis showed a significant relationship between the TPB model and the team behaviour. The anova test implies that the age group of 26-35 years of employees are having higher level of attitude towards the behaviours within the team due to their experience and a strong desire for career progress drives them to be proactive when it comes to team dynamics and behaviour. Likewise employees with 6-10 years of experience have positive attitude towards the team because they may have a clearer sense of their career goals and organizational culture, influencing their attitudes and actions as they seek to align with their long-term aspirations and the established norms. Also Employees with less than 2 years of experience often exhibit a high score in subjective norms due to their relatively recent entry into the organization or role. During this early stage, they are more inclined to seek guidance and validation from their colleagues and superiors. Consequently, this emphasis on subjective

norms can be a reflection of their desire to integrate effectively into the team and adapt to the workplace culture during the early stages of their careers.

In regression analysis examining the relationship between attitude, subjective norms, perceived behavioral control, and team behavior, a strong and positive association between these factors indicates that several key elements are working together to shape team behavior in a positive way. First, a positive attitude toward the team's goals and objectives can act as a motivating force, encouraging team members to actively engage, collaborate, and contribute to achieving those goals. Second, strong subjective norms suggest that team members are influenced by the perceived expectations and opinions of their colleagues, which can create a cohesive and supportive team environment. Finally, high levels of perceived behavioral control indicate that team members believe they have the necessary skills, ability, and autonomy to effectively execute their tasks and responsibilities within the team. When all these factors align positively and strongly, they create a synergy that fosters cooperation, teamwork and a shared commitment to achieving team objectives, ultimately leading to positive team behavior and outcomes.

Suggestion and Conclusion

Age and experience can significantly shape the attitudes of employees in the IT sector. Younger, less experienced employees may bring a fresh perspective, enthusiasm for innovation, and adaptability to new technologies, but they may also require more guidance and mentoring to reach their full potential. In contrast, older, more experienced employees may offer deep industry knowledge, problem-solving skills, and stability, but they could also be resistant to change or new approaches. To effectively manage and leverage these influences, organizations should consider fostering a culture of cross-generational collaboration, where mentorship programs, continuous learning opportunities, and diverse project teams encourage knowledge sharing and creativity among employees of all ages. Additionally, offering flexible work arrangements, recognizing and rewarding both experience and performance, and promoting inclusive leadership can help ensure that attitudes in the IT sector remain positive, regardless of age or experience level.

When the TPB model factors such as attitude, subjective norms, and perceived behavioral control demonstrate a robust and positive correlation with team behavior, organizations should capitalize on this alignment to foster even more effective teamwork. To harness this positive relationship, consider creating an environment that promotes open and clear

communication among team members, emphasizing the significance of shared goals and values. Implement training programs that enhance team members' skills and competencies, boosting their perceived behavioral control. Encourage leadership to actively endorse and exemplify the desired team behaviors, reinforcing positive subjective norms. Additionally, establish recognition and reward systems that acknowledge and celebrate collaborative efforts, further reinforcing the connection between these factors and team behavior. By fostering this synergy between individual attitudes and intentions and team-level behavior, organizations can cultivate a stronger, more cohesive, and high-performing team culture.

Analyzing the effectiveness of team behavior using the Theory of Planned Behavior (TPB) model offers valuable insights into the intricate interplay of attitudes, subjective norms, and perceived behavioral control within teams. The TPB framework provides a structured approach to understanding and predicting how these factors influence team behavior, which is crucial in an industry that relies heavily on collaborative efforts. By applying the TPB model, organizations can identify areas for improvement, develop targeted interventions, and foster a more positive and productive team environment. Effective communication, continuous learning opportunities, leadership support, and recognition mechanisms are key elements in optimizing the alignment between individual attitudes and intentions and team-level behavior. Ultimately, the successful application of the TPB model in the IT sector empowers organizations to harness the collective power of their teams, drive innovation, and achieve greater success in a rapidly evolving technological landscape.

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