

Understanding Characteristics of Extended Theory of Planned Behaviour: Systematic Literature Review

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Abstract

The application of extended Theory of Planned Behaviour (eTPB) has been demonstrated in various studies. The successful implementation of the extended Theory of Planned Behaviour (eTPB) will require better understanding of the rationales for the application in context. The paper presentation emerges from an interpretive and descriptive study which generated qualitative data through systematic literature review and document analysis. Thematic analysis was deployed to identify emerging and dominating themes as a focus for the interpretation. The analysis confirmed that extended theory of planned behaviour explains behaviour through attitudes, subjective norms, and perceived behavioural control and is capable of predicting and understanding human behaviour across various domains. However, the use of Theory of planned behaviour has been extended to enhance the predictive power of the model in understanding and influencing behaviours. Additional variables have emerged on top of the usual variables known as attitude towards the behaviour, subjective norms towards the behaviour, and perceived behaviour control. Still, the paper argues that although the diversity in variables exist among authors showing flexibility of the theory, this may create some confusion which may influence the capability of predicting and understanding human behaviour across various domains. The Theory of planned behaviour trend reflects that the choice of Theory of planned behaviour variables is determined by appropriateness and according to the context. Therefore, the paper argues that there are many variables for theory of planned behaviour but the dominant to be considered are clear knowledge and understanding ahead of all variables.

Keywords

Perceived Behaviour Control, Perceived Attitude, Subjective Norms, Theory of

1. Introduction

Theories such as theory of planned behaviour are believed to be apposite tools for research in various ways. In order to select an appropriate theory, the theory must at least meet the basic standards, or demonstrate the potential to be used (Canova & Manganelli, 2020). There must be sufficient evidence that the theory is applicable to the proposed context. Therefore, the choice of potential theory begins with compatibility of the problem and objective of the study (Cai, 2010). Studies are sometimes broad in that they require more than one theory; However, the traditional theory of planned behaviour (Ajzen, 1991), and extended theory of planned behaviour (Adenuga, Jack, & McCarry, 2024; Canova & Manganelli, 2020) are focus of the paper.

The Theory of Planned Behaviour (TPB) is a widely recognized framework for predicting and understanding human behaviour across various domains (Esposito, Bavel, Baranowski, & Duch-Brown, 2016). Research has shown that Theory of Planned Behaviour (TPB) is effective in explaining behaviours such as COVID-19 preventive measures, tax compliance among sole proprietors, digital marketing adoption in small enterprises, work-related intentions, and technology-supported behaviours like sexting among emerging adults (Esposito et al., 2016). Theory of Planned Behaviour (TPB) emphasizes the importance of attitudes, subjective norms, and perceived behavioural control in shaping behavioural intentions (Tegova, 2010; Ajzen, 1991). While attitudes and perceived behavioural control consistently influence intentions, the impact of subjective norms may vary depending on the behaviour being studied. Therefore, the Theory of Planned Behaviour (TPB) provides a valuable framework for understanding the factors that drive human behaviour and can be applied to a wide range of contexts to predict and promote desired behaviours (Álvarez Agüí et al., 2023).

The Extended Theory of Planned Behaviour (eTPB) expands upon the traditional Theory of Planned Behaviour (TPB) by incorporating additional variables to better understand and predict human behaviour. The Extended Theory of Planned Behaviour (eTPB) considers factors like attitude, subjective norms, perceived behavioural control, and external influences such as law enforcement or product attributes to provide a more comprehensive framework for analysing intentions and behaviours. By integrating these additional elements, researchers can gain deeper insights into the complexities of decision-making processes and better tailor interventions or strategies to promote desired behaviours among different populations, as demonstrated in various studies across different contexts (Liu & Liu, 2024).

The application of an extended theory of planned behaviour (eTPB) has been demonstrated in various studies to enhance the predictive power of the model in

understanding and influencing behaviours (Canova & Manganelli, 2020). Research has shown that extending the theory of planned behaviour by incorporating additional variables such as habit, moral norm, descriptive norm, and past behaviour, as well as nutritional-psychological factors like food neophobia, disgust, sensation seeking, and green consumption values, can significantly improve the model's ability to explain intentions and behaviours (Dupont, Harms, & Fiebelkorn, 2022; Canova & Manganelli, 2020). Moreover, integrating perceived environmental concern as a determinant of behavioural intention alongside the Theory of Planned Behaviour (TPB) components has been found to influence knowledge-sharing intentions among public employees, showcasing the versatility and adaptability of the Theory of Planned Behaviour (TPB) in different contexts (Dupont, Harms, & Fiebelkorn, 2022).

The challenges of applying the extended Theory of Planned Behaviour (eTPB) lie in various contexts. Studies have shown that while the extended Theory of Planned Behaviour (TPB) can effectively predict behaviours, there are limitations to its application (Xu, Liu, Liu, & Gao, 2023). The extended Theory of Planned Behaviour (TPB) may not fully capture the complexity of certain behaviours, as seen in the partial explanation of weight-related self-stigma on healthy eating and physical activity, where it was reported that the challenges of the extended Theory of Planned Behaviour include limited generalizability due to convenience sampling and inconsistent support (Cheng, Yam, Cheung, Lee, Ngai, & Lin, 2019). These challenges highlight the need for further understanding to explore additional factors that could enhance the predictive power of the extended theory of planned behaviour (eTPB) in understanding and modifying behaviours.

2. Research Methodology

The literature search for the application theory of planned behaviour (TPB) in general and extended Theory of Planned Behaviour (TPB) in particular covered a wide range of scholarly sources. The diversity of the sources reflects the scope of use of the concept of Theory of Planned Behaviour (TPB). Besides, the breadth of usage applied to Theory of Planned Behaviour (TPB) by both scholarly and non-scholarly people underscores the importance of the concept to both researchers and those practicing it. Although extended theory of planned behaviour (TPB) has diverse variables it has been discussed partially to determine the degree of diversity. Therefore, the systematic review of extended theory of planned behaviour (TPB) application, revealed requirements for the successful implementation.

For the methodological review, all the included papers were searched to identify, in the first instance, the area of study. A general search of the Internet using the Google search engine was undertaken to identify any other measures, and reference lists of all identified papers were hand-searched. The inclusion and exclusion processes were conducted in order to achieve quality and worthiness of data. The inclusion criteria were peer-reviewed journal articles and books in which theory of planned behaviour was a key focus and/or was assessed. The resources for

data included journal articles, books, interview data, and documents. Each source was initially read to identify the concept under study, in order to provide full immersion in the literature for concept analysis (McMillan & Schumacher, 2014). The process of data collection was conducted systematically using a coding process. The coding process for collecting topics included: definitions, attributes, surrogate terms, related concepts, antecedents, consequences, and empirical referents. Relevant data from the resources was transcribed verbatim on to the coding sheets.

After following the inclusion and exclusion criteria, the search criteria for theory of planned behaviour produced a sampling framework (McMillan & Schumacher, 2014). Therefore, randomly ordered citations were selected for analysis. The database was wide, and this included Academic Search Premier. Academic Search Premier from Ebsco Host was used as a database search engine. Academic Search Premier is among the largest multidisciplinary academic database search engines available.

3. Theory of Planned Behaviour (TPB)

The theory of planned behaviour (TPB) dates as early as 1975, when Fishbein and Ajzen proposed a theory known as the Theory of Reasoned Action (TRA). At the initial stage of TRA, attitude and subjective norms were perceived to have full influence on behavioural intention, an immediate determinant of behavioural achievement. When it was discovered that successful performance of a particular behaviour is considered dependent not only on motivation, but also on adequate control over the behaviour in question (Ajzen, 2005). This was the birth of the Theory of Planned Behaviour. Ajzen recognised that behaviour might have various obstacles both internal and external. In addition, other behaviour may have inherent deficiencies, of skills, ability, or knowledge that may limit goal attainment. Hence, perceived behaviour control was developed to address such challenges. Therefore, the Theory of Planned Behaviour has three independent determinants of intention known as attitude towards the behaviour, subjective norms towards the behaviour, and perceived behaviour control (Hoppe, Vieira, & Barcellos, 2013; Ajzen, 2005). These determinants lead to behaviour intention, which results in fulfilled behaviour.

4. Perceived Attitude

Perceived attitude in TPB is a combination of behaviour belief regarding the possible outcome and the outcome evaluation of advantages and disadvantages. Primarily, attitude towards behaviour is a product of a better understanding of the behaviour, in that it arises from understanding the potential outcomes and the possible advantages and disadvantages after evaluation (Canova & Manganelli, 2020). In other words, attitude towards behaviour is an overall evaluation of the consequences of the performing of the behaviour as either positive or negative. In this case, when the evaluation of the behaviour outcome is desirable, the result is

positive attitude, whereas a negative attitude results when the evaluation is undesirable. Therefore, attitudes are determined by belief about outcomes and attributes of performing the behaviour weighed by evaluating the attributes. A person who holds strong beliefs that positively value the outcome which result from performing the behaviour will have a positive attitude towards the behaviour. However, a person who holds strong beliefs that negatively value outcome results from the behaviour will have a negative attitude (Canova & Manganelli, 2020). Therefore, this means that a person's attitude towards a particular behaviour reflects an evaluative reaction, favourable or unfavourable towards engaging in the behaviour.

5. Perceived Subjective Norms

Subjective norm is an association of normative belief on whether people will approve or disapprove the behaviour and motivation to comply with behaviour requirements. Hence, subjective norms are individual beliefs on whether the behaviour will be approved or disapproved, and on the motivation of the individual to comply with the expectation (Canova & Manganelli, 2020). Therefore, a person's subjective norms are directly or indirectly determined by normative beliefs, whether other people approve or disapprove performance of the behaviour. A person who believes that a certain group of people approves that he or she should perform the behaviour is motivated to meet the expectation of the community, holding positive subjective norms. Conversely, when one believes that people do not approve the performance of the behaviour, negative subjective norms are evident; the person is less motivated to comply with the behaviour (Ajzen, 2005). Therefore, subjective norms sum up an individual perceived expectation that other people approve or wish someone to avoid the target behaviour. The feedback and reaction from the community either encourages or discourages; it reflects whether or not the programme is accepted. Eventually, this causes the success or failure of the programme.

6. Perceived Behaviour Control

The perceived behaviour control demonstrates a combination of control belief about what enables or prevents performance of the behaviour and perceived power over factors that may limit or enhance performance of the behaviour. Perceived behaviour control is also believed to incorporate both internal factors (skills) and external factors (pressure) (Canova & Manganelli, 2020; Huchting, Lac, & LaBria, 2008). However, it is clear that PBC is a major predictor in the TPB, because it has two routes of influence. It either influences the behaviour through intention, or it directs the behaviour (Ajzen, 1991). Perceived behaviour control is determined by control beliefs concerning the presence of facilitators and barriers to behaviour performance. This is weighed by evaluating a persons' commitment that shows degrees of control. Control is therefore synonymous with confidence in the ability required to perform a goal-directed behaviour. However, there are some concerns expressed regarding the conceptualisation of Perceived behaviour control.

The definition of the concept is unclear to the extent that it is sometimes likened to Bandura's concept of self-efficacy, concerned with judgment of how well one may execute courses of actions required to deal with the prospective situation.

Nevertheless, the inclusion of this variable is conceptualised as an estimate of the extent to which a person has control over performance of the behaviour in question (Canova & Manganelli, 2020; Giles & Larmour, 2000). Therefore, PBC reflects the influence of personal capacities and perceived constraints regarding the target behaviour (Hoppe, Vieira, & Barcellos, 2013; Ajzen, 2005) (Figure 1).

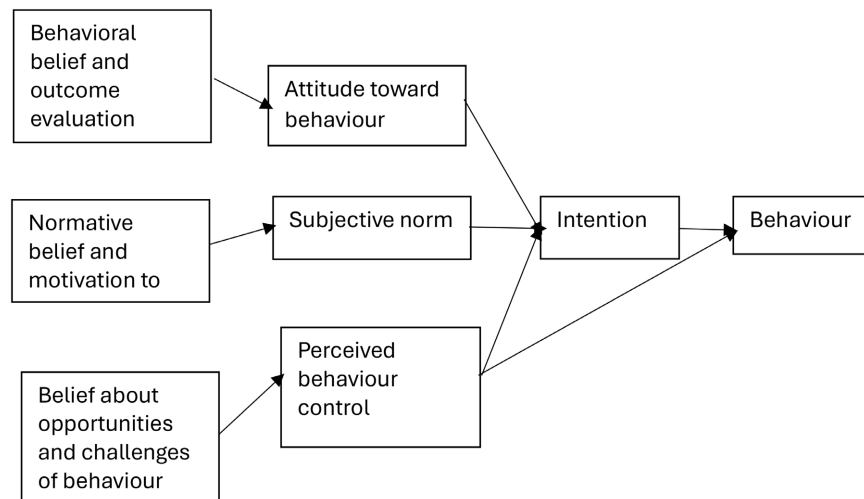


Figure 1. Theory of planned behaviour (Ajzen, 1991).

Extended Theory of Planned Behaviour

Although the Theory of Planned Behaviour is better understood in terms of behaviour, normative, and control beliefs, studies have revealed that social background factors which include age, gender, socio-economic status, information, among others, are also influential (Álvarez Agüí et al., 2023; Annahl, Anshory, & Aulia, 2021). This means that people growing up in different social environments will have different 'social capital' that provides a basis for their belief regarding the consequences of the behaviour, normative, and control beliefs. In addition, the relative importance of attitude, subjective norm, and perceived behavioural control in the prediction of intention is expected to vary, dependent upon the type of behaviour and the nature of the situation (Hoppe, Vieira, & Barcellos, 2013). With respect to the influence of perceived behaviour control on intention, Ajzen (Hoppe, Vieira, & Barcellos, 2013) states that perceived behavioural control may not be particularly realistic when a person has relatively little information about the behaviour; when requirements or available resources have changed; or when new and unfamiliar elements have entered into the situation. This means that there are other dominant influences from knowledge and understanding that inform or provide a basis for belief about the consequences of the behaviour apropos of normative expectations and opportunities, and risks of performing the behaviour. Therefore, knowledge and understanding is a single factor that has a

relationship with belief and perception.

Ajzen (1991) described TPB as open to further elaboration if yet other important proximal determinants are identified. It was emphasised that the TPB is, in principle, open to the inclusion of additional predictors, if it may be shown that they capture a significant proportion of the variance in intention or behaviour after the theory's current variables have been considered (Canova & Manganelli, 2020), hence the added knowledge and understanding as an indirect determinant of behaviour.

Theory of Planned Behaviour Extended Variables

The application of an upgraded Theory of Planned Behaviour (TPB) has been demonstrated in various studies to enhance the predictive power of the model in understanding and influencing behaviours (Canova & Manganelli, 2020). Research has shown that extending the Theory of Planned Behaviour (TPB) by incorporating additional variables (Table 1).

Table 1. Variables in theory of planned behaviour studies.

Author	Extended variables
1 Alsafar (2021)	The author used psychological factors and applied an extended Theory of Planned Behaviour to study speeding in Saudi Arabia, by incorporating moral norm, descriptive norm, and past behaviour for a comprehensive analysis.
2 Dupont, Harms, & Fiebelkorn (2022)	The authors applied an extended Theory of Planned Behaviour to analyse the acceptance of cultured meat in Germany, incorporating additional psychological and sociodemographic variables for a comprehensive assessment.
3 Esposito, Bavel, Baranowski, & Duch-Brown (2016)	The authors used the upgraded Model of Goal-Directed Behaviour, by incorporating descriptive norms, enhances the Theory of Planned Behaviour for better application in understanding physical activity intentions.
4 Negara, Ferdinand, Meitiana, Astuti, Anden, Sarlawa, & Mahrita (2023)	The authors extended the Theory of Planned Behaviour by incorporating perceived environmental concern to predict knowledge-sharing behaviour among public employees in Indonesia, enhancing understanding and prediction capabilities.
5 Tegova (2010)	The author enhanced the Theory of Planned Behaviour with emotional arousal alongside valence improves prediction of career choice intentions, showing potential for increased explanatory power in behavioural intention models,
6 Canova & Manganelli (2020)	The authors applied an extended Theory of Planned Behaviour model, incorporating affective and cognitive attitudes, subjective norm, perceived behavioural control, and habit to predict energy-saving behaviours in workplaces.
7 Annahl, Anshory, & Aulia (2021)	The authors applied the extended theory of planned behaviour with additional variables like knowledge, trust, and perceived ease of use to understand muzaki's intention to pay zakat through institutions.

Continued

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| 8 | Pelling & White (2009) | The authors applied an extended Theory of Planned Behaviour model by incorporating self-identity and belongingness, to predict young adults' high-level social networking website use and addictive tendencies. |
| 9 | Adenuga, Jack, & McCarry (2024) | The authors applied an extended theory of planned behaviour to analyse farmers' intention towards long-term land leasing adoption, emphasizing attitude, perceived control, subjective norm, and perceived risk as significant factors. |
| 10 | Wang, Chu, Deng, Lam, & Tang (2018) | The authors extended the Theory of Planned Behaviour to analyse farmers' compliance with pesticide standards, emphasizing psychological factors in decision-making within a developing country context. |
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New Extended Theory of Planned Behaviour

Since the expected knowledge to inform the belief is diverse, theories of knowledge argue that referent or conceptual knowledge and problem-centred or procedural knowledge may not be acquired in isolation. However, critical understanding of a concept leads to a thorough process; and emphasis of one concept in isolation limits understanding. Hence, there is greater interaction between knowledge, cognitive processes, and direct experiences (Pelling & White, 2009).

Although knowledge has the potential to inform belief and perception, there is no clear, concrete, established link with attitude, subjective norms, and perceived control. Nevertheless, the knowledge and understanding factors may be traced to their impact on the determinants of intention (Annahl, Anshory, & Aulia, 2021). Therefore, knowledge and understanding will influence intentions and behaviour indirectly by their effects on behaviour belief, normative belief, or control belief; and through the belief, their effects on attitudes, subjective norms, and perceived behaviour control, ultimately intention, and action (Annahl, Anshory, & Aulia, 2021; Ajzen, 2005); in the same vein, knowledge and understanding of theory of planned behaviour (Figure 2).

The appropriateness of new extended theory of planned behaviour hinges on the fact that it provides a framework of selected factors that may influence behaviour while well informed. The theory addresses not only individual or institutional beliefs and attitudes but also interpersonal or inter-institutional factors as a subjective norm. The extended theory of planned behaviour is an appropriate framework because it identifies underlying beliefs relevant to different sectors, thereby affecting their attitudes, norms, and perceived behaviour control that allow applicants to understand their reasons for motivating behaviour. The theory is also flexible in that it is not only used in health science, in which it has predominantly been used, but it also evaluates behaviours from other disciplines (Giles & Larmour, 2000; Huchting, Lac, & LaBria, 2008). Furthermore, the extended theory of planned behaviour is an appropriate framework in that it identifies and understand underlying beliefs thereby affecting the attitudes, norms, and perceived behaviour control.

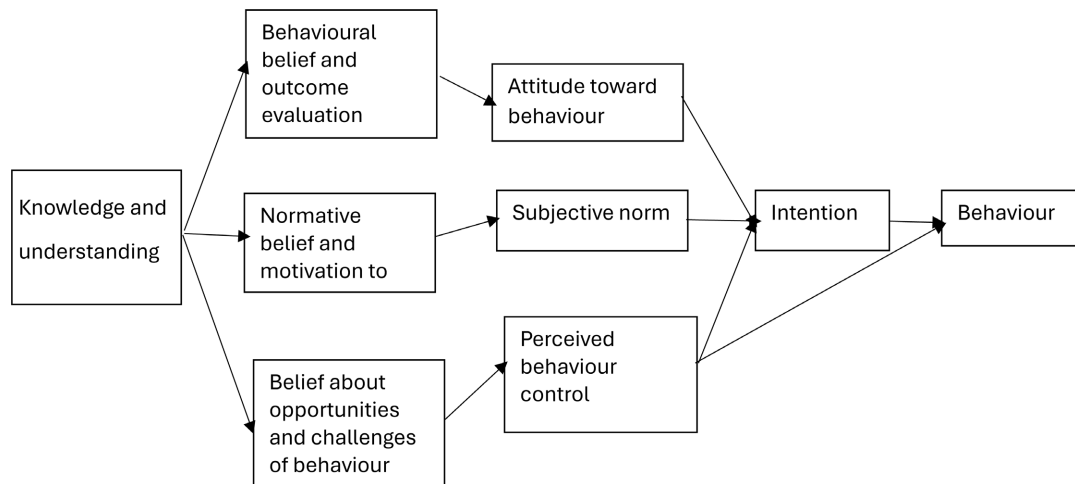


Figure 2. New Extended theory of planned behaviour, including knowledge and understanding.

7. Conclusion

The Extended Theory of Planned Behaviour (eTPB) expands upon the traditional Theory of Planned Behaviour (TPB) by incorporating additional variables to better understand and predict human behaviour. Additional variables have emerged on top of the usual variables known as attitude towards the behaviour, subjective norms towards the behaviour, and perceived behaviour control. However, although the diversity in variables exists among authors showing flexibility of the theory, this may create some confusion which may influence the capability of predicting and understanding human behaviour across various domains. Therefore, by integrating these additional elements, researchers can gain deeper insights into the complexities of decision-making processes and better tailor interventions or strategies to promote desired behaviours among different populations, as demonstrated in various studies across different contexts. Hence, the new extended theory of planned behaviour is an appropriate framework because it identifies underlying beliefs relevant to different sectors, thereby affecting their attitudes, norms, and perceived behaviour control that allow applicants to understand their reasons for motivating behaviour. Therefore, there is need for further understanding to explore additional factors that could enhance the predictive power of the extended theory of planned behaviour (eTPB) in understanding and modifying behaviours.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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