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BEYOND THE THEORY OF PLANNED BEHAVIOR: EVIDENCE FROM WHISTLEBLOWING RESEARCH IN ACCOUNTING THEORY

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A B S T R A C T

This article aims to present a comprehensive and systematic evaluation of the Extended Theory of Planned Behavior (ETPB) by mapping its core research areas over the past decade and proposing a structured thematic classification and future research agenda. Using a systematic literature review and thematic analysis of Scopus indexed 202 articles between 2015 and 2025 by Watase, this study develops an integrative multidimensional framework incorporating antecedents, outcomes, and contextual contingencies relevant to ETPB. The results reveal major trends in publication patterns, research themes, and journal outlets, while identifying key theoretical, methodological and contextual gaps that suggest clear directions for future research. The findings indicate that moral norm has emerged as the most dominant extension variable, highlighting the growing importance of ethical and value-based considerations in behavioral intention research. Furthermore, whistleblowing has become one of the most prominent applications of ETPB, demonstrating the relevance of moral, organizational, professional, and contextual factors in explaining ethical decision-making. Overall, although the Extended Theory of Planned Behavior enhances behavioral explanation by incorporating moral and contextual factors, its increasing complexity and limited methodological diversity indicate the need for clearer theory, stronger research designs, and wider validation.
Keyword: Extended Theory of Planned Behavior, Systematic Literature Review, Watase, Thematic Analysis, Conceptual Framework Development

Artikel ini bertujuan untuk menyajikan evaluasi komprehensif dan sistematis dari Teori Perilaku Terencana yang Diperluas (Extended Theory of Planned Behavior/ ETPB) dengan memetakan area penelitian intinya selama dekade terakhir dan mengusulkan klasifikasi tematik terstruktur serta agenda penelitian masa depan. Dengan menggunakan tinjauan literatur sistematis dan analisis tematik dari 202 artikel yang diindeks Scopus antara tahun 2015 dan 2025 oleh Watase, studi ini mengembangkan kerangka kerja multidimensional integratif yang menggabungkan anteseden, hasil, dan kontingensi kontekstual yang relevan dengan ETPB. Hasilnya mengungkapkan tren utama dalam pola publikasi, tema penelitian, dan media jurnal, sekaligus mengidentifikasi kesenjangan teoretis, metodologis, dan kontekstual utama yang menunjukkan arah yang jelas untuk penelitian masa depan. Temuan menunjukkan bahwa norma moral telah muncul sebagai variabel ekstensi yang paling dominan, menyoroti semakin pentingnya pertimbangan etis dan berbasis nilai dalam penelitian niat perilaku. Lebih lanjut, pelaporan pelanggaran (whistleblowing) telah menjadi salah satu aplikasi ETPB yang paling menonjol, menunjukkan relevansi faktor moral, organisasi, profesional, dan kontekstual dalam menjelaskan pengambilan keputusan etis. Secara keseluruhan, meskipun Teori Perilaku Terencana yang Diperluas (Extended Theory of Planned Behavior/ETPB) meningkatkan penjelasan perilaku dengan memasukkan faktor moral dan kontekstual, kompleksitasnya yang meningkat dan keragaman metodologis yang terbatas menunjukkan perlunya teori yang lebih jelas, desain penelitian yang lebih kuat, dan validasi yang lebih luas.
Kata kunci: Teori Perilaku Terencana yang Diperluas, Tinjauan Literatur Sistematis, Watase, Analisis Tematik, Pengembangan Kerangka Konseptual

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INTRODUCTION

The Theory of Planned Behavior (TPB) is one of the most influential theoretical frameworks for predicting human behavior and has been extensively applied in various domains of ethical decision- making,

including whistleblowing. Within the TPB framework, actual behavior is driven by behavioral intention, which reflects an individual's evaluation of the likelihood that they will engage in a particular action (Ajzen, 1991). In whistleblowing research, intention is frequently used as a proxy for actual reporting behavior because identifying real whistleblowers poses significant risks to individuals (Kaplan & Zellmer-Bruhn, 2001). Despite its widespread adoption, recent studies have raised concerns regarding the TPB's capacity to explain complex behaviors. Scholars argue that deliberate intention is not always the primary trigger of human action (Wegner & Wheatley, 1999), may be substantially shaped by implicit attitudes (Greenwald & Banaji, 1995) and subconscious cognitive processes (Aarts & Dijksterhuis, 2000). Even when measurement criteria appear satisfactory, random errors in TPB constructs remain difficult to eliminate (Ajzen, 2011). These empirical tensions suggest that TPB may not fully capture behaviors involving moral judgments, personal risk, and intricate organizational dynamics. Research on whistleblowing further highlights these inconsistencies. Empirical findings indicate that the relationships among attitudes, subjective norms, and perceived behavioral control in predicting whistleblowing intention are unstable across contexts (Alleyne et al., 2017; Latan et al., 2018; Sarikhani & Ebrahimi, 2021). Meta-analysis evidence also shows that correlations between intention and behavior as well as between perceived behavioral control and intention are typically moderate, leaving substantial unexplained behavioral variance (Armitage & Conner, 2010). Patterns suggest that TPB does not adequately account for the psychological and contextual factors embedded in whistleblowing decisions. These theoretical and empirical limitations have motivated scholars to extend TPB by integrating additional variables such as moral obligation, perceived risk, anonymity mechanisms, organizational support, and individual identity. Consequently, many studies across disciplines have shifted toward the Extended Theory of Planned Behavior (ETPB), which incorporates new predictors to enhance explanatory power and capture more nuanced psychological mechanisms. However, this rapid expansion has introduced new challenges, including model fragmentation, a lack of standardization across studies, and potential construct inflation resulting from the continuous addition of variables.

Planned Behavior (ETPB). Although ETPB has been widely applied across various domains, existing studies primarily examine specific extension variables in isolated contexts, resulting in fragmented findings and limited understanding of how ETPB has evolved theoretically and empirically. Furthermore, despite whistleblowing emerging as one of the most prominent applications of ETPB, prior reviews have not systematically synthesized how moral, organizational, professional, and contextual extensions collectively explain whistleblowing intentions and ethical decision-making. To address these gaps, this study reviews a decade of ETPB research (2015–2025) to map its evolution, identify dominant extension variables, examine methodological and contextual trends, and develop an integrative thematic framework. The novelty of this study lies in its comprehensive synthesis of ETPB literature, the structured classification of extension variables, and the integration of evidence from whistleblowing research to advance understanding of ethical decision-making. Accordingly, this study addresses the following research question: How has the Extended Theory of Planned Behavior (ETPB) evolved over the past decade, particularly in explaining whistleblowing and ethical decision-making behavior, and what theoretical, methodological, and contextual directions should guide future research?

The remainder of this article is organized as follows. Section 1 explaning the introduction. Section 2 reviews the theoretical foundations of the Theory of Planned Behavior (TPB) and the development of the Extended Theory of Planned Behavior (ETPB), with particular

emphasis on its application in whistleblowing and ethical decision-making research. Section 3 describes the research methodology, including the systematic literature review procedure, article selection process, and analytical approach. Section 4 presents the findings of the review, covering publication trends, geographical distribution, methodological patterns, dominant extension variables, and the application of ETPB in whistleblowing studies. Section 5 is discussion and conclusion and section 6 is future research direction.

Literature Review

Extended Theory of Planned behavior

Theory of Planned Behavior (TPB) is conceptually robust, the model has undergone substantial expansion over time due to persistent inconsistencies in empirical findings and the theoretical limitations highlighted by scholars. Numerous meta-analyses demonstrate that attitude, subjective norms, and perceived behavioral control explain only a modest proportion of variance in behavioral intention, indicating the need for additional predictors to strengthen the model's explanatory power (McEachan et al., 2011; Rivis & Sheeran, 2017). Furthermore, the typically moderate relationship between intention and actual behavior suggests that TPB does not fully capture the complex psychological and contextual determinants underlying morally laden behaviors such as whistleblowing. These limitations have led researchers to enrich the model with supplementary constructs.

The Extended Theory of Planned Behavior (ETPB) emerges when TPB's core variables are augmented with context-specific factors. Certain extensions decompose the original constructs into multidimensional belief systems to enable more granular analysis (Taylor & Todd, 1995). Other extensions introduce additional variables such as moral norms, perceived risk, trust, organizational climate, self-efficacy, identity, or emotional states to capture motivations and constraints not encompassed within the original TPB framework (Chen & Tung, 2014; Qalati et al., 2022). While these enhancements substantially improve predictive accuracy, they also give rise to theoretical challenges. The need for ETPB becomes particularly evident in ethical decision-making contexts, where individuals must balance personal values, organizational expectations, professional responsibilities, and potential consequences associated with their actions. One of the most prominent examples is whistleblowing behavior. Whistleblowing refers to the disclosure of illegal, unethical, or fraudulent activities occurring within an organization to parties capable of taking corrective action (Near and Miceli, 1985). Unlike many routine behaviors examined under TPB, whistleblowing involves substantial personal risk, uncertainty, moral conflict, and organizational pressure, making it significantly more complex to predict (Mesmer-Magnus & Viswesvaran, 2005; Miceli et al., 2009). Within the whistleblowing literature, TPB has emerged as one of the most influential theoretical frameworks for explaining reporting intentions (Ajzen, 1991; Park & Blenkinsopp, 2009). The theory proposes that individuals' intentions to report wrongdoing are influenced by their attitudes toward reporting, perceived social expectations regarding reporting, and perceived ability to report misconduct. Numerous studies have confirmed the importance of these three determinants in explaining whistleblowing intentions among auditors, accountants, public officials, and employees across various organizational settings (Kim & Lee, 2021; Owusu et al., 2020; Zakaria et al., 2016). Despite its extensive application, empirical evidence from whistleblowing studies consistently reveals that the explanatory power of the original TPB remains insufficient. Findings concerning subjective norms, for example, are often inconsistent across countries, professions, and reporting channels (Brown, 2016; Mansor, 2022; Ningsih et al., 2024). Similarly, individuals who express strong intentions to report misconduct do not always engage in actual whistleblowing behavior whe

confronted with real organizational pressures, reflecting the intention behavior gap highlighted in TPB research (Armitage & Conner, 2001; Davies et al., 2002; Donald et al., 2014). These inconsistencies suggest the existence of additional psychological, moral, and contextual factors that influence whistleblowing decisions beyond the traditional TPB components. Consequently, whistleblowing research has become one of the most active domains for extending TPB. Scholars have incorporated numerous additional constructs, including moral obligation, ethical judgment, moral intensity, professional commitment, independence commitment, organizational commitment, perceived organizational support, trust in government, religiosity, self- identity, personal responsibility, perceived retaliation, anonymity protection mechanisms, and local cultural influences (Antinyan et al., 2020; Harsanti et al., 2016; Santos & Larasati, 2025; Sarikhani & Ebrahimi, 2022).The inclusion of these variables has substantially improved the explanatory power of TPB and provided a richer understanding of the factors that motivate individuals to report wrongdoing. The evolution of whistleblowing studies also demonstrates that ETPB extensions can be broadly categorized into several interrelated dimensions. First, moral dimensions include constructs such as moral obligation, moral intensity, ethical judgment, and moral norms, which capture the ethical reasoning underlying reporting decisions (Alleyne et al., 2018; Larasati & Wulan, 2024; Latan et al., 2018). Second, organizational dimensions encompass perceived organizational support, ethical climate, anonymity systems, and retaliation mechanisms that shape the organizational environment in which reporting occurs . Third professional dimensions include professional commitment and independence commitment, which are particularly relevant in accounting and auditing contexts where professional ethics play a central role (Alleyne et al., 2019; Tuan Mansor et al., 2020). Finally, contextual dimensions such as culture, religiosity, institutional trust, and reporting channels explain variations in whistleblowing intentions across countries and organizational settings (Antinyan et al., 2020; Santos & Larasati, 2025; Zakaria et al., 2020). The whistleblowing literature therefore provides compelling evidence that ETPB is not merely an extension of TPB but represents an important theoretical evolution capable of capturing the multidimensional nature of complex ethical behavior. By integrating moral, organizational, professional, and contextual factors, ETPB offers a more realistic representation of decision-making processes in situations characterized by uncertainty, ethical dilemmas, and personal risk. The growing application of ETPB in whistleblowing research further demonstrates its value as a flexible framework capable of accommodating diverse contextual influences while maintaining the theoretical foundations established by TPB (Ajzen, 1991; Alleyne et al., 2019; Latan et al., 2018; Sarikhani & Ebrahimi, 2022).

Although ETPB expands the model's explanatory potential, its continuous evolution introduces concerns related to conceptual overextension. The proliferation of supplementary variables has produced non-standardized model structures, complicating attempts to synthesize findings across studies. The high degree of flexibility inherent in ETPB raises the risk of model inflation and diminishes TPB's initial theoretical parsimony. Similar critiques have been noted in broader behavioral research, where excessive model elaboration is argued to compromise coherence and reduce comparability across empirical contexts (Sniehotta et al., 2014). Nevertheless, the development of ETPB reflects a sustained scholarly effort to reconcile theoretical frameworks with empirical realities particularly in contexts involving moral risk where human action is influenced by a wider constellation of psychological, social, and contextual factors than attitudes, norms, and perceived control alone (Ajzen, 2015; Manstead, 2011). ETPB has become a central framework for examining behavioral intentions and other complex forms of prosocial action.

Methodology

This study comprises two main components: an extensive literature review complemented by additional data analysis and discussion (Göcke et al., 2022; Waqas et al., 2020). This study using watase application to analyze the systematic review process. The review process adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines established by Moher et al., (2009). The adoption of PRISMA is justified given its status as a widely recognized and methodologically rigorous protocol that has been applied across numerous empirical studies. Panic et al., (2013) further demonstrated that journals endorsing PRISMA generally exhibit higher reporting and methodological quality compared to those that do not. PRISMA is also commonly utilized within business and marketing research (Huurne et al., 2017; Siddaway et al., 2018)). Its broad acceptance therefore enhances the likelihood that studies following this protocol will be viewed as credible and suitable for publication (figure 1).

Accordingly, this study adopts the PRISMA framework, which remains a valid and widely used approach and is integrated into the SPAR-4 SLR method, to systematically identify, screen, and analyze recent and relevant studies in line

with current research developments (Sauer & Seuring, 2023). Applying the predefined search parameters resulted in the initial identification of 553 records

retrieved from Scopus using the keyword extended theory of planned behavior within the 2015 and 2025 timeframe. Prior to the screening phase, several items were removed due to ineligibility. Specifically, 65 records were classified as unsuitable by automated filtering tools, and 32 additional records were excluded for reasons such as not

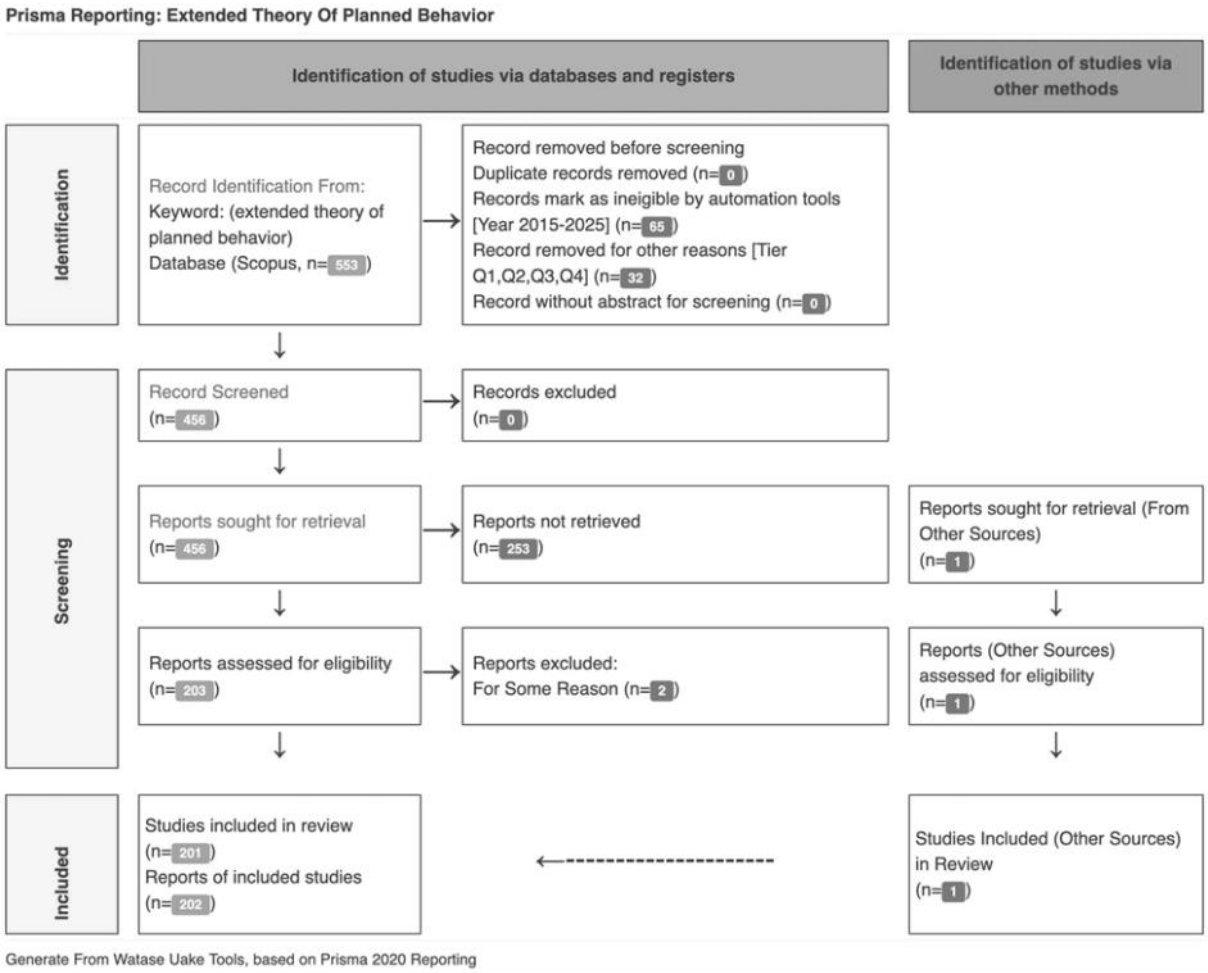


Figure.1
Identification, screening and inclusion (Source : Watase, 2025)

meeting the targeted journal tier requirements. Consequently, 456 records proceeded to the screening stage. All records were evaluated based on their titles and abstracts, and none were removed at this step. These 456 reports were then subjected to full-text retrieval; however, 253 documents could not be accessed despite multiple attempts. This left 203 articles available for eligibility assessment. Following this evaluation, 2 studies were excluded for failing to satisfy the established criteria, resulting in 201 studies eligible for inclusion. An additional study identified through other sources was also assessed and deemed suitable, bringing the total number of studies reviewed to 202, as illustrated in the PRISMA flow diagram in figure 1.

Subsequently, a descriptive statistical analysis was undertaken to examine various dimensions of the dataset, including the annual distribution of publications, longitudinal trends in research adopting the Extended Theory of Planned Behavior (ETPB), geographical origins of the studies, predominant research methods, leading journals publishing on the topic, theoretical frameworks utilized, and the social or behavioral contexts in which ETPB was applied.

The insights generated from the Concept Matrix and the hypothesis network analysis will be used to pinpoint unaddressed areas within the current body of research, thereby forming the basis for recommendations for future inquiry. The study adopts the research gap framework introduced by (Miles, 2017), which aims to uncover domains within the literature that remain insufficiently explored and to articulate opportunities where meaningful theoretical or empirical contributions can be made.

ANALYSIS AND DISCUSSION

section maps the development of the studies identified on the Extended Theory of Planned Behavior. The analysis categorizes these studies by year of publication, geographical context, methodological approach, leading journals contributing to the field, digital or social platforms examined, the types of endorsers or actors involved, theoretical foundations employed, and citation patterns. A detailed discussion of the insights derived from these study characteristics is presented thereafter.

Evolution of Keyword Dynamics

The results of the keyword search demonstrate a consistent upward trajectory in publication volume over the observed period (figure 2). In the early phase (1999–2008), research output remained very limited, with fewer than five publications per year. This pattern indicates that scholarly interest in the topic was still emerging, consistent with the initial development stage of a research field as described by Shafique (2012). A gradual increase followed between 2009 and 2015, during which publication numbers rose slowly but steadily. This moderate growth reflects the expanding conceptual relevance of the topic and parallels the early consolidation phase highlighted in thematic evolution studies (Cobo & Herrera, 2011).

A more substantial rise occurred from 2016 to 2019, when annual publications increased from 17 to 34. This period marks a transition toward field maturation, driven by the diffusion of foundational theories and the diversification of methodological approaches. Similar inflection points are often observed when research domains begin to attract interdisciplinary attention (Zupic, 2015). The most remarkable surge occurred from 2020 onwards. The output more than doubled from 2019 to 2020, rising to 56 publications, and continued to

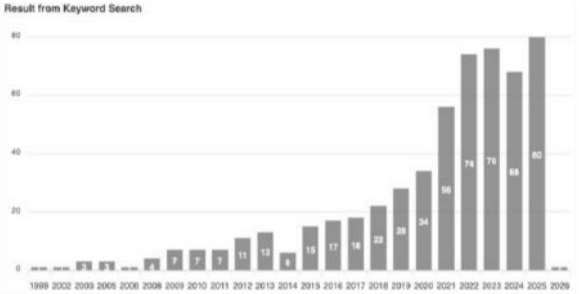


Figure.2
Publication trend from keyword mapping

escalate with notable peaks in 2021 (74), 2022 (76), and 2024 (80). This rapid growth reflects heightened global attention and the increasing scientific relevance of the topic, echoing trends typically observed in rapidly developing research areas (Donthu et al., 2021).

Although slight fluctuations appear in 2023 and 2024, the overall direction remains strongly upward, indicating durable and expanding scholarly engagement. The very low count observed for 2026 is expected and can be attributed to incomplete indexing for that year, as the review was conducted before the full publication cycle was concluded a limitation commonly noted in longitudinal SLR analyses (Snyder, 2019). Overall, the pattern illustrates a robust and accelerating advancement of the research domain, signifying its emergence as a dynamic and influential topic within the wider academic landscape.

Publication Growth Patterns

The annual distribution of publications illustrates how scholarly interest in the ETPB has evolved over time in figure 3. Research output began to increase notably after 2015, reflecting growing recognition of the limitations of the original TPB in explaining behavioral intentions across various contexts. This upward trend aligns with prior studies that highlight the need to incorporate additional psychological, moral, and contextual variables such as moral obligation, perceived risk, trust, and social media influence to enhance the predictive power of the model (Latan et al., 2018; Rivis & Sheeran, 2017; Sarikhani & Ebrahimi, 2022).

The rise in publications between 2018 and 2021 corresponds with a broader shift in behavioral research, particularly in consumer behavior, environmental decision -making, digital technology adoption, and ethical behavior studies. During this period, many scholars adopted the ETPB framework to address inconsistencies in empirical findings related to attitude, subjective norms, and perceived behavioral control. For example, research in digital platform usage and social media behavior increasingly incorporated constructs such as habit, emotional engagement, cybercrime and platform addiction to refine the explanatory model (Teo et al., 2020).

Global Distribution of ETPB Studies

Based on the geographical distribution and country classification presented in the figure 4 and supported by the accompanying list of studies, it is evident that research employing the Extended Theory of Planned Behavior (ETPB) is heavily concentrated in Asian countries, particularly in developing economies. China leads as the most prominent contributor with 43 studies, followed by India with 14 studies and Iran with 10 studies. Several other Asian countries including the Philippines, Pakistan, South Korea, and Indonesia also make notable contributions, albeit in smaller numbers. In contrast, developed countries such as the United States, the United Kingdom, Australia, the Netherlands, Belgium, and Spain demonstrate comparatively lower levels of engagement, typically ranging from two to five studies. Overall, 59.8% of ETPB studies originate from developing

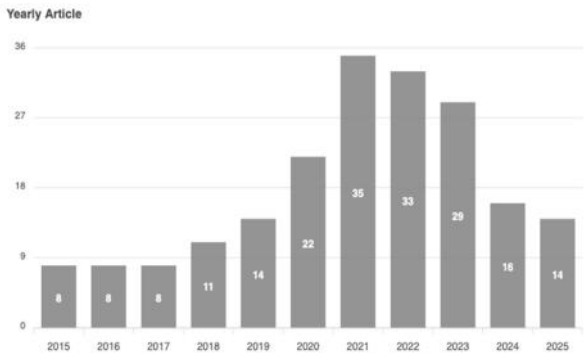


Figure.3
Year of Publication (Source: Watase, 2025

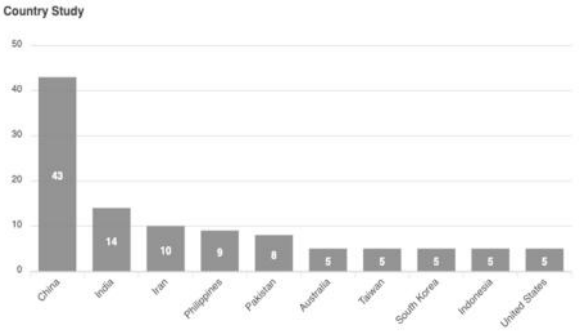


Figure.4
Studies Country distribution

countries, while only 40.2% are conducted in developed nations, indicating that the growth and application of ETPB are predominantly rooted in developing contexts.

Method Used Trend

According to Figure 6, the methodological approaches employed in studies utilizing the Extended Theory of Planned Behavior (ETPB) are grouped into ten categories, including survey, mixed-methods research, longitudinal design, descriptive–positivist approaches, experimental methods, narrative review, observational study, path analysis, positivist orientation, and validation studies. As illustrated in the figure, survey based research overwhelmingly dominates the methodological landscape, accounting for 93.3% of all studies reviewed. Mixed-methods approaches represent the second most frequently applied method, followed bylongitudinal and descriptive–positivist designs, each appearing in considerably smaller proportions. Experimental designs, narrative reviews, observational studies, path analyses, positivist approaches, and validation studies collectively represent only a marginal share of the methodologies employed.

The overwhelming dominance of survey methodology reflects the historical trajectory and theoretical underpinnings of TPB and its subsequent extensions. Since TPB is fundamentally grounded in the measurement of latent psychological constructs such as attitude, subjective norms, perceived behavioral control, and extended variables including moral norms, habit, self-identity, environmental concern, and risk perception survey instruments provide a pragmatic and statistically tractable means of capturing individuals' cognitive evaluations (Ajzen, 1991; Conner & Armitage, 1998). The limited use of longitudinal, experimental, and validation studies underscores an ongoing methodological gap within the ETPB literature. Longitudinal and experimental designs are critical for assessing causal pathways and temporal stability of ETPB constructs; however, their low representation suggests that most ETPB findings still rely on cross-sectional inference. This pattern mirrors broader concerns highlighted in behavioral science scholarship, which emphasize the need for stronger causal designs to substantiate theoretical extensions and reduce common-method bias (McEachan et al., 2011; Sheeran & Webb, 2016). Mixed-methods research, though still limited, appears more frequently than experimental or longitudinal approaches, indicating a rising interest in enriching ETPB with contextual and qualitative insights. Such approaches allow researchers to explore how extended variables manifest within specific cultural or social settings a trend aligned with calls for TPB extensions that better capture affective, contextual, and socio-environmental influences (Izek Ajzen, 2005).

Overall, the methodological profile depicted in the figure demonstrates that the evolution of ETPB research remains strongly rooted in survey-based quantitative designs. While this tradition has enabled consistent measurement and large-sample generalization, the

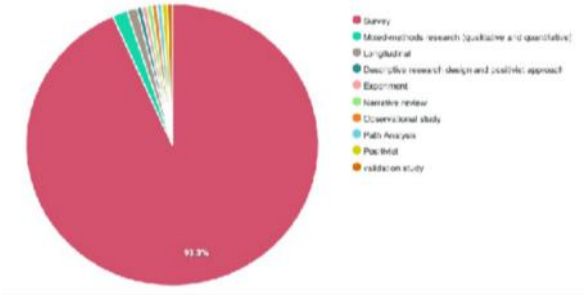


Figure 5.
Methological trends

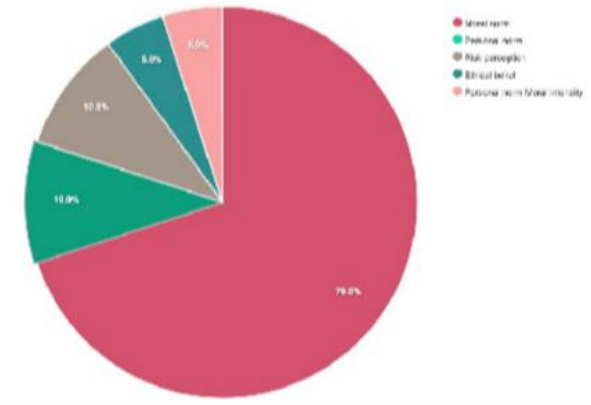


Figure 6.
Dominant Extension Variable of TPB

comparatively low adoption of experimental, longitudinal, and validation studies suggests a continued need for methodological diversification to advance theory testing, causal explanation, and construct refinement.

Leading Journal in the ETPB Domain

According to Table 1 present the ten journals that have published the highest number of articles exploring the Extended Theory of Planned Behavior. The most productive outlet in terms of the number of articles published is Sustainability, which dominates the landscape with 41 articles, reflecting its central role as a key platform for scholarly debate within this research domain. This substantial volume of publications is complemented by an impressive 1,910 citations, positioning Sustainability as not only the most prolific but also one of the most academically influential journals in the field. Following this, the British Food Journal stands out with six articles and 170 citations, underscoring its continued relevance in studies related to food systems, consumer behavior, and sustainability oriented decision making.

Several Q1 journals contribute significantly to ETPB research through both publication volume and citation impact, particularly in areas related to sustainability, risk management, transportation, and environmental studies. Journals such as Sustainability, Environment, Development and Sustainability, International Journal of Sustainable Transportation, and Journalof Cleaner Production show strong scholarly influence, while some Q2 journals also achieve notable citation impact, highlighting the interdisciplinary nature and broad academic relevance of the field.

Extension to the TPB

An analysis of the distribution of extension variables employed in Extended Theory of Planned Behavior (ETPB) research over the past decade reveals that moral norm (70%) and personal norm (10%) have emerged as the most dominant extensions used to strengthen the predictive capacity of the original TPB across countries and research domains (Figure 7). This prominence is closely linked to the nature of the behaviors most frequently examined particularly pro-environmental, prosocial, and ethical behaviors which inherently involve moral considerations, social responsibility, and ethical consequences (Karimi, 2021; Peng et al., 2025). A substantial portion of studies in the ETPB corpus focuses on sustainability related behaviors, such as green consumption in Indonesia, where moral norm significantly shapes personal norm and intention to consume environmentally friendly products (Fiandari et al., 2019). Environmental concern and moral norm jointly predict pro- environmental intentions and ecological actions in China, where moral obligation and internalized norms have been found to drive waste management and green lifestyle adoption (He & Yu, 2021). Across these contexts including green consumption, waste reduction, and electric vehicle adoption empirical findings consistently demonstrate that moral norm substantially enhances intention prediction, reinforcing the attitude intention pathway in social and

Table 1.
Publishing Journal

Classification	Tier	Total Article	Citation
Sustainability	Q1	41	1,910
British Food Journal	Q1	6	170
International Journal of Disaster Risk Reduction	Q1	4	182
Heliyon	Q1	4	55
Environment, Development and Sustainability	Q1	3	378
Journal of Transport & Health	Q1	2	103
International Journal of Sustainable Transportation	Q1	2	302
Journal of Rural Studies	Q1	2	200
Psychology & Health	Q1	2	41
Waste Management	Q2	2	332

ecological settings in China, Arab Saudi, and Turkey (Meltem & Özbük, 2025; Moon et al., 2019; Shi et al., 2017; Sobaih, 2023).

Although conceptually related to moral norm, personal norm highlights the role of self-expectations and internal moral standards (figure. 8). Evidence from Netherlands indicated that personal norm, awareness of adverse consequences, and attitude significantly influence the intention to buy MSU meat, with personal norm being the strongest predictor (Hoeksma et al., 2017). Similar patters are observed in Spain, where personal norm positively impacted attitude; ethnocentric orientation increased both intention and behaviour, while cosmopolitan orientation decreased behaviour and unexpectedly increased intention slightly; overall, extending TPB with SIT and personality traits enhanced explanatory power (Sabina & Ricardo, 2021).

In contrast, moral intensity is found in only 5% of studies because it is relevant primarily to behaviors that involve explicit moral dilemmas or ethical conflicts. Within the dataset, moral intensity appears in contexts such as whistleblowing in Iran and ethical decision-making in Malaysia, where individuals must consider the potential moral consequences of their actions (Sarikhani & Ebrahimi, 2022). However, most behaviors examined in ETPB research do not involve high stakes moral dilemmas; instead, they concern everyday behaviors such as consumption, health, transport, and technology use. Consequently, moral intensity lacks cross-contextual applicability, which explains its limited use relative to the more versatile constructs of moral norm and personal norm.

A conceptual classification of the extension variables further demonstrates that moral norm, personal norm, ethical belief, and moral intensity function as internal factors, arising from personal values, moral evaluations, and internal psychological processes. For example, ethical belief is a significant determinant in studies on eco-friendly plastic use in China (Sun et al., 2017). In addition, ethical consumption decisions indicating that internal ethical convictions guide behavioral intention in Belgium (Conradie, 2023). Conversely, risk perception operates as an external factor, as it is shaped by situational conditions such as disasters, health threats, or technological uncertainties. Research on disaster preparedness in Hong Kong shows that risk perception significantly influences preparedness intention (Cheng, 2016).

ETPB in Ethical Decision-Making and Whistleblowing Research

Whistleblowing has emerged as one of the most prominent applications of the Extended Theory of Planned Behavior (ETPB) within accounting and ethical decision-making research. Unlike routine organizational behaviors, whistleblowing involves reporting illegal, unethical, or fraudulent activities that may expose the reporter to personal, professional, and organizational risks. Consequently, the decision to report wrongdoing is often characterized by moral dilemmas, uncertainty, fear of retaliation, and conflicts between organizational loyalty and professional responsibility. Such complexity makes whistleblowing a particularly suitable context for examining the limitations of the original Theory of Planned Behavior (TPB) and the need for its theoretical extension (Mesmer-Magnus & Viswesvaran, 2005; Miceli & Near, 1985).

The increasing adoption of TPB in whistleblowing research reflects its ability to explain reporting intentions through attitude, subjective norms, and perceived behavioral control. Studies conducted across various professional settings, including auditors, accountants, public officials, police officers, company secretaries, and government employees, consistently demonstrate the relevance of these three constructs in predicting whistleblowing intentions (Kim & Lee, 2021; Park & Blenkinsopp, 2009; Zakaria et al., 2016). However, the growing body of evidence also indicates that these core TPB variables alone are insufficient to fully explain whistleblowing behavior, particularly in situations involving ethical conflicts and organizational pressures. The

evolution of whistleblowing research over the last decade demonstrates a gradual shift from the application of the original TPB toward the adoption of ETPB models. Researchers increasingly incorporate additional variables to improve the explanatory power of the framework and to capture dimensions not adequately represented by attitude, subjective norms, and perceived behavioral control. This trend is evident in accounting studies conducted across diverse geographical settings, including Indonesia, Malaysia, Barbados, the United States, South Korea, Iran, Ghana, Thailand, and the Philippines.

The expansion of TPB reflects scholars' recognition that whistleblowing decisions are influenced not only by cognitive evaluations but also by moral, organizational, professional, and contextual considerations. Among the extended variables, several constructs appear repeatedly across studies. Professional and independence commitment represent some of the most frequently examined extensions, particularly in accounting and auditing contexts where professional ethics and independence are fundamental principles (Alleyne et al., 2019; Tuan Mansor et al., 2020). Moral related variables, including moral obligation, ethical judgment, moral intensity, desired moral approbation, and personal responsibility for reporting, are also widely integrated into ETPB models to capture ethical reasoning processes underlying whistleblowing decisions (Latan et al., 2018; Sarikhani & Ebrahimi, 2021). In addition, organizational factors such as perceived organizational support, organizational commitment, formal retaliation, and structural anonymity mechanisms have been shown to significantly influence individuals' willingness to report wrongdoing by shaping perceptions of organizational protection and risk. Contextual variables including religiosity, trust in government, culture, and local norms have also been incorporated to explain cross-country differences in whistleblowing behavior.

A major motivation for extending TPB arises from the inconsistent findings reported for some of its original components. While attitude toward whistleblowing and perceived behavioral control generally demonstrate positive and significant relationships with whistleblowing intentions, findings concerning subjective norms remain mixed. Several studies report significant effects of subjective norms on reporting intentions, whereas others find no significant influence. Similar inconsistencies are observed across different respondent groups, organizational settings, and reporting channels. Furthermore, evidence suggests that individuals with strong whistleblowing intentions do not always engage in actual reporting behavior when confronted with organizational retaliation, social pressure, or uncertainty regarding reporting outcomes. These findings highlight the existence of an intention behavior gap that cannot be adequately explained by the original TPB framework alone. The Extended Theory of Planned Behavior addresses these limitations by incorporating additional variables capable of capturing the multidimensional nature of ethical decision-making.

Moral constructs strengthen the model's ability to explain ethical reasoning and individual responsibility, while organizational variables account for institutional support, protection mechanisms, and workplace climate. Professional commitment variables explain the unique ethical obligations faced by accountants and auditors, whereas contextual factors help capture cultural and environmental influences on reporting behavior. Collectively, these extensions provide a more comprehensive explanation of whistleblowing intentions and behavior than the original TPB, demonstrating that ethical reporting decisions are shaped by a complex interaction of individual, professional, organizational, and societal influences. Consequently, whistleblowing represents one of the most mature and theoretically significant applications of ETPB within accounting research and serves as a valuable context for understanding the continuing evolution of behavioral theories in ethical decision-

making.

Discussion

The findings of this systematic review indicate that the Extended Theory of Planned Behavior (ETPB) has undergone significant conceptual evolution over the past decade a development driven largely by fundamental limitations in the original TPB's capacity to account for increasingly complex, morally embedded, and contextually sensitive behavioral phenomena. While attitudes, subjective norms, and perceived behavioral control remain the core pillars of the TPB, contemporary research increasingly incorporates moral norms, personal norms, perceived risk, trust, self-identity, and environmental concern to remedy recurring insufficiencies in predictive precision (McEachan et al., 2011; Rivis & Sheeran, 2017). The prevalence of moral and personal norms in 70% of the studies reviewed underscores the growing recognition that many modern behaviors such as sustainable consumption, disaster preparedness, ethical purchasing, and health compliance are rooted not merely in cognitive deliberation but in moral duty, internalized responsibility, and value driven reasoning.

This aligns with critiques that TPB's rational evaluative foundations inadequately capture the morally infused nature of contemporary pro-social and pro-environmental actions and highlights a broader theoretical shift toward integrating moral and socio-cognitive mechanisms within behavioral prediction models (Ajzen, 2011; Manstead, 2011). Yet, the proliferation of extension variables, while improving model fit, raises critical concerns regarding theoretical inflation and fragmentation. The conceptual inconsistency in how scholars define and operationalize extensions particularly moral norms, environmental identity, and perceived risk has created difficulties in establishing cross-study comparability and threatens the coherence of the model itself. This issue reflects longstanding critiques of behavioral theory expansion, where adding predictors enhances statistical output but undermines theoretical parsimony (Ajzen, 2015; Sniehotta et al., 2014).The dominance of cross-sectional designs (93.3%) further exacerbates this issue by limiting causal inference and failing to capture the stability of extended constructs over time. Such methodological concentration raises a critical question: Do extension variables genuinely provide incremental explanatory power, or do they merely reflect context-specific artifacts shaped by transient socio-environmental cues? Addressing this concern requires methodological diversification and stronger causal designs particularly longitudinal analyses, controlled experiments, and multi-group or cross-cultural comparisons to clarify the distinct contribution of each extension variable relative to TPB's core constructs (Javier & Esteban, 2015). The findings also highlight whistleblowing as one of the most theoretically mature applications of ETPB. Unlike many behavioral contexts that focus primarily on individual preferences, whistleblowing decisions involve moral responsibility, organizational pressure, and perceived personal risk. The consistent integration of moral, professional, and organizational variables in whistleblowing studies demonstrates how ETPB can provide a more comprehensive explanation of complex ethical decision- making than the original TPB

The geographical concentration of ETPB studies in developing and collectivist contexts suggests that the prominence of moral and personal norms may be culturally contingent, raising concerns about the model's generalizability to individualistic societies and highlighting notable gaps in organizational, technological, political, and digital behavior research. Overall, while ETPB remains a theoretically robust and empirically useful framework, its continued relevance depends on balancing conceptual expansion with theoretical parsimony through clearer construct boundaries, stronger causal methodologies, and broader cross-context validation

Conclusion

This study demonstrates that the Extended Theory of Planned Behavior (ETPB) has evolved into a widely adopted framework for explaining complex behavioral intentions across diverse contexts. By synthesizing a decade of ETPB research, this review provides a structured understanding of its theoretical development, dominant extension variables, methodological patterns, and application areas. Overall, the findings contribute to a clearer conceptualization of ETPB and offer a foundation for advancing future behavioral and ethical decision-making research.

Limitations This study has several limitations that should be acknowledged. First, the review was restricted to articles indexed in the Scopus database and published between 2015 and 2025. Although Scopus is one of the most comprehensive academic databases, relevant studies indexed in other databases such as Web of Science, Dimensions, or Google Scholar may not have been captured. Second, the analysis focused exclusively on published journal articles, excluding conference papers, books, book chapters, and other forms of scholarly output that may provide additional insights into the development of the Extended Theory of Planned Behavior (ETPB). Third, the thematic classification and interpretation of extension variables were based on the coding and synthesis process adopted in this review, which may involve a degree of subjective judgment despite the systematic procedures employed. Finally, because the study relies on secondary data from existing literature, the findings are constrained by the methodological and contextual limitations of the reviewed studies themselves. Future reviews may expand database coverage, include additional document types, and employ bibliometric or meta-analytic techniques to further validate and extend the findings presented in this study.

Future Research Direction

This study further outlines the scope for future research by employing the Theory, Methodology, and Context (TMC) framework, as demonstrated in prior scholarship (Gupta & Kumar, 2020; Halder et al., 2021; Hariningsih et al., 2024) The following subsections elaborate specific directions for advancing research on the Extended Theory of Planned Behavior.

Theoretical Advancement

The review reveals that the theoretical expansion of TPB over the past decade has been dominated by a narrow set of extension variables, primarily moral norm, personal norm, perceived risk, trust, and self-identity. Although these constructs enhance predictive power, their concentration indicates limited theoretical diversification and a growing dependence on morally oriented explanations. This pattern underscores the need for ETPB scholarship to move beyond cognitive normative extensions and incorporate a wider set of psychological, emotional, and socio-cognitive mechanisms.

Several extension variables emerging from the reviewed studies demonstrate strong potential for further development. Moral and personal norms consistently improved model performance across sustainability, disaster preparedness, and agricultural contexts (Ataei et al., 2020; Heidari et al., 2018). While trust especially institutional trust proved pivotal in public health and policy relevant Behaviors (Liu, 2025; Zhang et al., 2024). Similarly, perceived risk and self-identity showed robust and replicable associations across green purchase, mobility, and environmental behavior (Peng et al., 2025). These findings indicate that these variables warrant deeper theoretical integration rather than continued ad hoc inclusion. Looking forward, theoretical progress will require more rigorous model comparison and incremental validity testing to determine whether proposed extensions contribute unique explanatory power beyond TPB's core constructs. Without such consolidation, ETPB risks evolving into a fragmented collection of context-specific variants rather than a coherent behavioral framework. A forward-looking research agenda should

therefore prioritize: (1) integration of dual-process variables such as habit and automaticity; (2) systematic inclusion of affective constructs; (3) expansion of identity-based pathways; and (4) incorporation of digital-era determinants such as algorithmic trust and AI-related perceptions.

Methodological Innovation

The review identifies a pronounced methodological imbalance in ETPB research, with cross- sectional surveys comprising 93.3% of all studies. Although surveys align with TPB's structural emphasis on intention formation, this heavy reliance constrains causal inference and obscures the temporal dynamics of key extension variables. Advancing the methodological robustness of ETPB therefore requires a strategic shift toward greater methodological diversification. Longitudinal designs are essential for evaluating how intentions, moral norms, and risk perceptions evolve over time, enabling stronger validation of the temporal assumptions embedded in ETPB. Likewise, experimental methods are crucial for establishing causality by isolating the effects of specific extensions, such as trust or moral intensity on behavioral intention. Given that most ETPB studies have been conducted in collectivistic societies, future work should also utilize multi-group structural equation modeling to test cross-cultural invariance and clarify whether ETPB operates similarly across divergent cultural contexts.

A further priority is the incorporation of objective behavioral data including purchase records, digital trace data, and energy use logs to address persistent concerns regarding the modest correlation between intention and behavior (Sheeran, 2011). Reliance solely on self-reported measures introduces bias and limits the explanatory reach of ETPB. In parallel, emerging analytical tools such as Bayesian SEM, machine learning based model validation, and hypothesis network analysis offer powerful avenues for improving construct precision and testing increasingly complex ETPB models. Collectively, these methodological advancements will enable ETPB research to move beyond descriptive associations toward more rigorous causal, temporal, and cross-contextual validation, ultimately strengthening its theoretical coherence and global applicability.

Contextual Expansion of ETPB

The geographical distribution of ETPB studies in the reviewed literature reveals a clear imbalance, with the majority originating from developing economies across Asia, the Middle East, and Africa, such as China (J. Cheng et al., 2025), India (Shalender & Sharma, 2021), Iran (Ataei et al., 2020), Indonesia (Fiandari et al., 2025) and Ethiopia (Minbale et al., 2025). These contexts, shaped by collectivistic cultural norms and strong social obligations, consistently elevate the role of moral norms, personal norms, and environmental concern (Ataei et al., 2020). However, the model's applicability in individualistic Western settings where autonomy and internal attitudes dominaten remains underexplored, limiting the global generalizability of ETPB.

Future studies should therefore expand ETPB applications into developed countries with stronger institutional infrastructures. Institutional trust and regulatory confidence are critical behavioral determinants in more advanced governance systems (Liu, 2025; Zhang et al., 2024). This opens the door to testing new extension variables such as institutional trust, trust in science, trust in technology, and perceptions of system reliability. Similarly, perceived behavioral control may function differently in resource-rich environments than in emerging economies constrained by structural barriers (Cheng et al., 2025; Novak & Juvan, 2025).

Another promising direction is the integration of ETPB with emerging digital and technological contexts. Although a few studies highlight digital risk, privacy concern, and algorithmic trust, research remains insufficient given the rapid expansion of AI-driven decision-making, virtual

environments, and cybersecurity threats (Biber et al., 2025; Caso et al., 2021). Constructs such as digital identity, algorithmic trust, moral disengagement online, and AI reliability warrant systematic investigation. In addition, ETPB should be extended to organizational and policy-related domains areas noticeably absent from the reviewed studies. Existing evidence on institutional trust suggests substantial potential for applying ETPB to workplace compliance, ethical behaviors, and technology adoption in professional settings (Liu, 2025; Zhang et al., 2024). Future research should also expand the application of ETPB in whistleblowing and other organizational ethical behaviors. Given the persistent intention behavior gap in whistleblowing research, future studies may examine how organizational support, retaliation risk, reporting channels, and ethical climate interact with moral norms to influence actual reporting behavior rather than merely reporting intentions. Finally, comparative multi-country designs are essential for building global theory. Studies already illustrate significant cross-cultural variation in normative pressures and risk perceptions (Sobaih, 2023). Expanding such designs will help identify which ETPB extensions are universal and which are context specific, strengthening the model's theoretical precision and international
relevance.

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