

Developing A Unifying Theoretical Framework for Understanding Organisational Innovation Adoption

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We develop a multi-level model that incorporates contextual effects into the Theory of Planned Behaviour. We believe that this I-TPB can move the organisational innovation adoption field forward by providing both integration and a stronger theoretical base. Our model enables researchers and theorists to not only categorise factors to create simplicity, but also to understand *why* these factors are important. More specifically, we hypothesise that attitudes (including a need to innovate, benefits, costs, and risk-taking), subjective norms (pressure from customers, suppliers, competitors, and external agencies), and perceived control (including organisational readiness, resources, and structure) are the main, proximal predictors of innovation adoption. We believe that the I-TPB will be a useful tool for furthering both organisational innovation and innovation research.

Keywords: organisational innovation, theory of planned behaviour

There has been a preponderance of research examining the predictors of organisational adoption of innovations (e.g., Damanpour, 1991). However, much of this research has been done on a piecemeal basis, with factors examined ranging from specific managerial characteristics (e.g., Tabak & Barr, 1996) to specific organizational characteristics (e.g., Nohria & Gulati, 1996). We believe that this body of literature is important, however, we also believe that a unifying theoretical framework needs to be developed to bring coherence and greater understanding to the field. An underlying theoretical framework would create a deeper level of understanding, promote the integration of research findings into a coherent set of strategies, and allow for prediction of new areas of research. In this paper, we develop such a framework based on the Theory of Planned Behaviour (TPB: Ajzen, 1985, 1991). This theory predicts an individual's behaviour on the basis of his/her attitudes, normative beliefs, and control, and through vigorous testing has been found to be relatively robust (Sheeran & Taylor, 1999). While previous work has always considered the TPB at the individual-level, we believe that findings emerging from the organisational innovation literature signal that this theory can be considered across levels. Our second contribution, therefore, is in furthering the TPB field itself by incorporating multi-level constructs.

In this paper, we will develop the Innovation Theory of Planned Behaviour (I-TPB) and show how TPB can be used to understand the organisational innovation adoption literature. After describing the original TPB and its components, we will develop the I-TPB by discussing and integrating the research on organisational innovation adoption¹. To begin, however, we first define organisational innovation adoption as the decision by an organisation's decision-makers to invest in a new process, product, or service. Following other researchers (e.g., Zaltman, Duncan, & Holbeck, 1973), we differentiate this adoption stage from the implementation of innovation, and concentrate only upon the former.

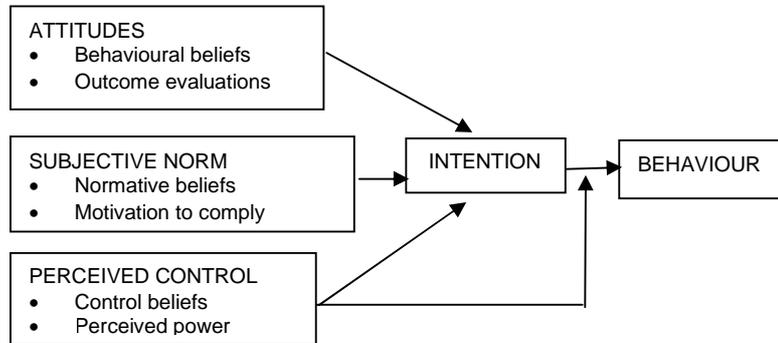
¹ Due to limitations on the size of this manuscript, not all the organisational innovation adoption literature will be reviewed. We have aimed to show a representative sample of the relevant literature.

THE THEORY OF PLANNED BEHAVIOUR

The Theory of Planned Behaviour

Figure 1. The Theory of Planned Behaviour.

(TPB) (Ajzen, 1985, 1991) is a social psychological model aimed at understanding the link between attitudes and behaviour. The original model of TPB is outlined in Figure 1. As can be seen, a



person's intention to perform a behaviour is the immediate antecedent of that behaviour. The relationship between intention and control is moderated by an individual's actual control of the situation; for instance, I may have an intention to write a top-tier journal article, but it is only when I have control over my teaching commitments that that intention is manifested in behaviour. Intention, in turn, is predicted by the interaction of three factors: 1) attitudes; 2) subjective norms; and 3) perceived behavioural control. An individual's attitudes towards a behaviour are determined by their beliefs about that behaviour and the perceived costs and benefits of engaging in that behaviour. The subjective norm is a function of 1) the individual's belief that significant others think that the behaviour is appropriate, and 2) the individual's motivation to comply with those people. For example, I may perceive that my Head of School thinks that I should write a top-tier journal article, and because I value his opinion, I will have a positive subjective norm. Finally, perceived control represents the ease with which a person believes they can accomplish that behaviour. As noted earlier, control also moderates the relationship between intention and behaviour. The TPB has been widely supported with research examining behaviours such as exercise behaviour (Hagger, Chatzisarantis, & Biddle, 2002), safe sex (Terry, Gallois, & McCamish, 1993), and health behaviours (Godin & Kok, 1996) amongst many others. A recent meta-analysis indicated that attitudes, subjective norm, and perceived control accounted for 39-42% of the variance in intentions, and that intentions and control accounted for 28-34% of the variance in behaviour (Armitage & Conner, 2001).

THE INNOVATION THEORY OF PLANNED BEHAVIOUR

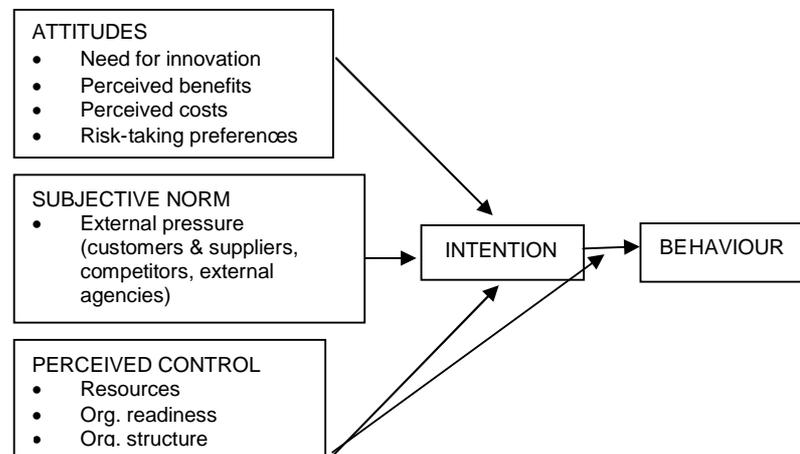
The I-TPB builds upon the original TPB in two ways: First, we apply the model in a new context, innovation adoption; second, we incorporate effects at multiple levels of influence rather than focusing solely on individual-level factors. Previous research examining TPB in the workplace has focused solely on specific individual-level behaviours and individual-level beliefs about the behaviour, norms, and control (Gentry & Calantone, 2002); even a derivative of TPB aimed at technology acceptance (TAM: Davis, 1989), is based solely at the individual level. Yet, individuals do not operate in isolation, particularly in organisational settings, and it is important to recognise the influence that the contextual factors play (Meyer & Goes, 1988; Baldrige & Burnham, 1975). Thus, we propose that the TPB can include factors not only at the individual level, but also at group, organisational, and environmental levels. As far as we are aware, no other research has identified these contextual components as potential elements within TPB.

As highlighted in the introduction, much of the literature surrounding organisational innovation adoption has been done without an underpinning theoretical framework. This work has separately examined factors such as managerial characteristics (e.g., risk propensity and self-efficacy: Tabak & Barr, 1996), employee characteristics (e.g., skill base and readiness:

Snyder-Halpern, 2001) and organisational characteristics (size and structure: Damanpour, 1991).

Furthermore, the research that has taken a broader outlook has usually used a framework based only on differentiating levels of factors - individual (e.g., CEO tenure), organisational (e.g., size), and environmental factors (e.g., competition and turbulence) (e.g., Kimberley & Evanisko, 1981; Meyer &

Figure 2. The Innovation Theory of Planned Behaviour



Goes, 1988). This simplistic framework, while increasing breadth, remains descriptive and does not capture the underlying processes influencing innovation adoption.

However, more recently, theorists have developed some overarching models that categorise factors affecting innovation adoption. We discuss three of these models and show how the categories overlap with the I-TPB. However, it is important to note that these current models are also descriptive and do not have an underpinning theoretical reasoning. By using the I-TPB over and above these descriptive models, we are able to understand why these factors are important, the role they play, and any additional factors that may have been omitted to date.

First, Iacavou, Benbasat, and Dexter (2001) present a model of three elements proposed to affect innovation adoption – perceived benefits, external pressure, and organisational readiness. Perceived benefits was defined as the relative advantage of adopting the innovation, together with its compatibility with the organisation and its trialability. We believe this represents *attitudes* towards the innovation, incorporating both the behavioural beliefs and the outcome evaluations. External pressure is the pressure felt from particular trading partners, customers, and suppliers to adopt the innovation, and as such represents *subjective norms*. Finally, organisational readiness is the availability of the organisational resources that are necessary for successful adoption. Clearly, this is a component of *perceived control*, as it represents the ease or difficulty with which adopting the innovation can occur. Thus, Iacavou et al. (2001) identified three components that clearly map on to the I-TPB components of attitude, subjective norms, and control, respectively. Iacavou et al.'s (2001) model was also used by Mehrten, Cragg, and Mills (2001) who used a case study approach to examine internet adoption in SMEs. Their findings supported the three-factor model, and thus provide support for our proposition that the I-TPB underpins organisational innovation adoption.

Second, Lehman, Greener and Simpson (2002) identified categories of factors that determined the readiness of an organisation to adopt an innovation. Although their research comes out of a clinical field, the factors identified are similar to those found in the traditional organisational sciences. The first category is motivational readiness, and comprises need for improvements, training needs, and pressure for change.

We propose that the first two factors represent *attitudes*, and the last factor represents *subjective norms*. The other categories identified by Lehman et al. (2002) are institutional resources (e.g., training), staff attributes (e.g., efficacy), and organisational climate (e.g., staff openness to change). We believe that all three represent facets of *control*. That is, having the “right” resources, staff attributes, and climate will increase the ease with which an innovation can be adopted, thus increasing intentions and adoption. Finally, Frambach and Schillewaert (2002) also identified different categories of factors. Their factors were based upon characteristics of different levels - innovation characteristics, supplier and network characteristics, and adopter characteristics. However, we believe that the elements within these categories still align with our theoretical framework. For instance, innovation characteristics such as advantage and trialability and adopter characteristics of innovativeness can be seen to represent *attitudes*, supplier marketing efforts and social networks can be seen to represent *subjective norms*, and other adopter characteristics such as size and structure can be seen to represent facets of *control*.

We have shown that three current integrative models of innovation adoption can be seen as representing the I-TPB. Our proposition, therefore, that the I-TPB is an appropriate theoretical framework for understanding innovation adoption is supported. However, there is much empirical research outside these two models. Therefore, we will now discuss some of these separate empirical findings and suggest that they too fit within the overarching I-TPB framework of attitudes, subjective norms and control.

Attitudes

The TPB posits that positive beliefs about the behaviour and its outcomes will lead to an increase in that behaviour. In the I-TPB, we propose that this also underlies the innovation adoption literature. Indeed, Damanpour's (1991) meta-analysis found that senior managers' attitudes towards innovation were related to innovation. Similarly, we propose that other forms of attitudes towards innovation exist in the form of perceived needs for innovation, perceived benefits from the innovation, and preferences for risk-taking. A perceived need to adopt an innovation represents a belief that positive outcomes will ensue from that adoption, and thus denotes attitudes. Furthermore, a perceived need for innovation has often been found to be a driver for innovation adoption (e.g., Tzokas & Saren, 1997). For example, Chau and Tam (2000) and

Min and Galle (2003) found that a need to innovate “pulled” senior executives and decision-makers into adoption. Conversely, Nohria and Gulati (1996) found that innovation was stifled when organisations had too much slack as they did not need to adopt innovations to survive.

The perceived costs and benefits of the innovation adoption have also been found to be related to innovation adoption decisions (e.g., Iacovou, et al., 2001; Min & Galle, 2003). Both the perceived benefits and the perceived costs clearly represent behavioural beliefs affecting attitudes towards adoption.

Finally, the propensity to take risks is also likely to have an effect on intentions and adoption behaviour.

Adopting an innovation is inherently risky (e.g., Bolton, 1993; Wan, Ong, & Lee, 2005; Wang, & Cheung, 2004), so therefore, an individual’s or organisation’s attitude towards taking risks will be a part of their overall attitude towards adopting innovation. Research has suggested that the CEO’s risk-taking propensity has an effect on innovation adoption (e.g., Tabak & Barr, 1996), and that the risk-taking climate within the organisation also affects innovation adoption decisions (e.g., Nystrom, et al., 2002).

Subjective Norm

In the I-TPB, the subjective norm is a perceived pressure to adopt an innovation. This pressure is derived from organisational beliefs that others feel that innovation adoption is appropriate and beneficial and a willingness to comply with those other people. In other words, the organisation (or the decision-makers within that organisation) must take these third parties seriously and be motivated to abide by their beliefs. We propose that there are three categories of these key third parties who will be influential: customers and suppliers, competitors or networks, and external agencies.

Attewell (1992) and Min and Galle (2003), amongst others, have found that the needs and know-how of suppliers and customers have a large effect on adoption of innovation. Indeed, basic marketing literature is posited on the assumption that innovation is driven by the customers’ needs (Anonymous, 1996; Ekdahl, Gustafsson, & Edvardsson, 1999; Gordon, et al., 1993).

Innovation diffusion theories (e.g., Rogers, 1995; Redmond, 2004) use network theory to propose that there are two types of motivation to adopt an innovation: cohesion and equivalence. The cohesion model of diffusion indicates that organisations are likely to copy the adoption decision of familiar others, such as

other network members (Burt, 1987). On the other hand, structural equivalence model suggests that organisations are motivated by competition (Burt, 1987). Using a variety of literatures, Pouder and St John (1996) also described geographical “hot-spots” where innovating organisations look only to what their competitors are doing – we believe this signals the strength of subjective norms as a predictor of innovation adoption. Nevertheless, Nohria and Gulati (1996) found that the environmental context of a subsidiary (including the degree of competition and the technological dynamism of the environment) had no influence on the innovative capacity of the functional units within it. Hence, this may be a fruitful area for future research.

Finally, external agencies, such as technology diffusion agencies, government, and universities, may also be influential in setting norms for innovation adoption. Although little research has addressed this issue, some theorists have proposed that this institutional environment may play a role. For instance, Drazin & Schoonhoven (1996) raise the possibility that particular government policies (e.g., policy on collaboration and antitrust enforcement) influence innovation adoption. We believe that this is an area of research that may be important in supplying subjective norms, but that has been neglected.

Perceived Control

The degree to which an organisation can ensure a successful outcome of the adoption process is likely to play an important role, both in predicting intentions to adopt, and in moderating the relationship between intentions and actual innovation adoption. Much of the research conducted in organisational innovation falls into this category as it represents the ease (or difficulty) of adoption within the organisation. Most pertinent is that of organisational readiness, resources, and structure. We propose that when an organisation has the right level of resources, structure, and readiness, it is more able to adopt innovations successfully. This ability leads to an intention to adopt, and a more successful adoption.

There are many theorists who suggest that organisational readiness is important in adopting innovation. For example, Attewell (1992) suggested that knowledge and technical know-how were key; Damanpour (1996) found that the level of technical knowledge resources was important to innovation; and Snyder-

Halpern (2001) validated a model of readiness that comprised various sub-dimensions including resource readiness, end-user readiness, technical readiness, knowledge readiness, and process readiness.

The resources available to the organisation have also been found to be important in predicting adoption behaviour. In a study of the subsidiaries of two major multinational corporations, Nohria and Gulati (1996) found that when an organisation had too few resources within the firm, adoption occurred to a much less extent than when there was more slack. Damanpour (1991) and Nystrom, Ramamorthy, and Wilson (2002) have also found significant relationships between slack resources and innovation.

Finally, the structure of the organisation is a component of the ease with which an innovation can be adopted. Organisational size has often been found to be related to innovation adoption, with larger organisations adopting innovations more than smaller ones (e.g., Camisón-Zornoza, Lapedra-Alcamí, & Segarra-Cip, 2004; Damanpour, 1991). In a meta-analysis of studies conducted over 30 years, Damanpour (1996) found that a number of organisational factors were positively related to innovation adoption, including specialisation (allowing for a broader knowledge base), professionalism (indicating greater self-confidence of staff), manager's tenure (representing greater legitimacy and knowledge), and administrative intensity (enabling the organisation to deal with changes due to the innovation). It can be seen that all of these factors decrease the difficulties associated with adopting innovations.

Multiplicative Nature

The multiplicative nature of the TPB indicates that these factors operate in combination with each other. Indeed, much of the research examining organisational innovation adoption has examined moderating effects. For instance, Nystrom, et al. (2002) found that risk orientation (attitudes) and organisational size (control) interacted such that large organisations with a low risk orientation showed less innovation adoption than similarly sized organisations with high risk orientation. The I-TPB predicts that more of these interactions exist, and future research can examine those hypotheses.

Distal Factors

Our model, in applying the TPB, represents a model of proximal predictors of innovation adoption. We suggest that these attitudes, subjective norms, and control factors are the primary influences underpinning

adoption behaviour. However, we do not suggest that these are the *only* factors affecting organisational innovation adoption. Indeed, we recognise that there may be many other variables that are influential. Nevertheless, we propose that these are more distal factors that operate via attitudes, subjective norms, and/or control. For instance, the organisation's strategy is likely to influence innovation adoption (e.g., Srinivasan, Lilien, & Rangaswamy, 2002; Han, Kim, & Srivastava, 1998; Miles & Snow, 1978; Miller & Friesen, 1982). We suggest that strategy influences the degree to which the decision-makers will have a positive attitude towards a particular innovation (e.g., an organisation with a risk-taking strategy may be more likely to have positive attitudes), the degree to which it feels a motivation to comply with its significant others (e.g., an organisation with a strong customer focus will have a strong motivation to comply with customer needs), and the degree to which it has control over adoption (e.g., an organisation with an innovation strategy will be more likely to make resources available for innovation).

IMPLICATIONS OF THE I-TPB MODEL

In this paper, we have provided a theoretical framework to integrate and understand organisational innovation adoption research. Our model enables researchers and theorists to not only categorise factors to create simplicity, but also to understand *why* these factors are important. This greater depth of understanding will then allow us to predict potentially important variables in the future and highlight gaps in our understanding.

More specifically, we hypothesise that attitudes (including a need to innovate, perceived benefits and costs, and risk-taking preferences), subjective norms (that is, pressure from customers, suppliers, competitors, and external agencies), and perceived control (including organisational readiness, resources, and structure) are the main, proximal predictors of innovation adoption. Furthermore, we predict that these three elements will operate in combination. Nevertheless, while we believe that the current literature supports the main premises, the I-TPB is a preliminary model and needs to be empirically tested.

In conclusion, we have built a multi-level model that incorporates contextual effects into the traditional social psychological TPB. Furthermore, we have used this I-TPB to move the organisational innovation

adoption field forward by providing both integration and a stronger theoretical base. The I-TPB allows both researchers and practitioners to hone in on the specific trigger points of organisational innovation adoption. Rather than being faced with a long list of potential factors affecting innovation adoption, we are now more able to identify parsimonious, coherent strategies for increasing innovation adoption. We therefore believe that the I-TPB will be a useful tool for furthering both organisational innovation and innovation research.

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