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# HEAD TEACHERS' INTENTION AND BEHAVIOR TO SUPPORT THE UPTAKE OF ICT IN THEIR SCHOOLS: AN APPLICATION OF THE THEORY OF REASONED ACTION AND THE THEORY OF PLANNED BEHAVIOUR

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## Abstract

*This study investigated the influence of the attitudes and other psychological factors of head teachers on their support of the uptake of Information Communication Technology (ICT) in their schools. Using the Theories of Reasoned Action (TRA) and Planned Behaviour (TPB), 72 Greek head teachers were surveyed about their intention to support the uptake of ICT in their schools. Their behaviour was measured three months later. The analysis of the theories showed that the positive attitudes towards the support of the uptake, the perceived behavioural control as well as strong intention to support the uptake of ICT in their schools were among the factors that influenced head teachers' support of the uptake of ICT. The TPB was found to be better than the TRA in predicting support of the uptake of ICT behaviour.*

**Keywords:** theory of reasoned action, theory of planned behaviour, head teachers, uptake of ICT in schools.

## INTRODUCTION

Over the last 27 years, research has been conducted at international, national and institutional levels to investigate the factors which influence the uptake of ICT in schools (e.g. Pelgrum and Plomp, 1991; 1993; Pelgrum, 2001; Pelgrum and Anderson, 2001). At the school level, the support and encouragement provided by the head teacher are among the factors which influence the uptake of ICT (see Pelgrum and Plomp, 1991; Fullan, 1992). Most specifically, the results of previous research in ICT in education showed that these educators' support and help in acquiring resources and software, in arranging adequate teacher training programmes and in organising curriculum change and innovation are essential for the successful adoption of ICT by teachers in their school (e.g. Akker et al., 1992, Fullan, 1992, Jones, 2004).

Additionally, the results of most of the studies show that the uptake of ICT depends on the head teachers' attitudes towards computers (Cox et al., 1988; Rhodes and Cox, 1990; Pelgrum, 1993). According to the findings of the above research in the schools where the head teachers had positive attitudes towards the introduction of ICT in education, the uptake was

higher than in schools whose head teachers had negative or neutral attitudes. However, from the literature review no research has been found which refers specifically to the effects of other psychological factors on head teachers' support of the uptake of ICT. The Theory of Reasoned Action (TRA) and its extension, the Theory of Planned Behaviour (TPB) (see next section) have been found to be very useful in predicting a wide range of behaviours (see Ajzen, 2002 and [www-unix.oit.umass.edu/~ajzen/](http://www-unix.oit.umass.edu/~ajzen/)). However, no research has been undertaken to examine whether the TRA and TPB also holds for head teachers' intention and behaviour in supporting the uptake of ICT in schools. By using these theories attention can be focused on the psychological factors (except attitudes towards computers) which influence the uptake of ICT in schools.

The aim of this study was to use the Theory of Reasoned Action (TRA) and the Theory of Planned Behaviour (TPB) in order to investigate the factors that influence head teachers' intention and behaviour to support the uptake of ICT in their schools. The objectives of this study were to: 1) investigate the influence of attitude toward the behaviour, subjective norm and perceived behavioural control on head teachers' intention and behaviour to support the uptake of ICT in their schools; and 2) compare the predictive validity of the TRA and TPB in predicting head teachers' support of the uptake.

## The Theory of Reasoned Action (TRA) and the Theory of Planned Behaviour (TPB)

According to the TRA (see Ajzen, 1988; 1991; 2002), human action is influenced by intention to perform the behaviour. Intention, in turn is influenced by attitudes towards the behaviour and subjective norms. Attitudes towards the behaviour are overall evaluations of the behaviour as positive or negative for the individual while subjective norms are general perceptions of social pressure to perform or not to perform a particular behaviour (see Ajzen and Fishbein, 1980). Attitudes and subjective norms are underpinned by behavioural and normative beliefs.

According to behavioural beliefs “a person who believes that performing a given behaviour will lead to mostly positive outcomes will hold a favourable attitude toward performing the behaviour, while a person who believes that performing the behaviour will lead to mostly negative outcomes will hold an unfavourable attitude” (ibid, p. 7). According to normative beliefs “a person who believes that most referents with whom he is motivated to comply think he should perform the behaviour will perceive social pressure to do so” (ibid, p. 7). The predictive validity of the TRA has specific limitations. In a meta-analysis of research on the theory, Sheppard et al., (1988) found that the TRA does not allow accurate prediction of intention and thus behaviour for situations in which persons have incomplete control.

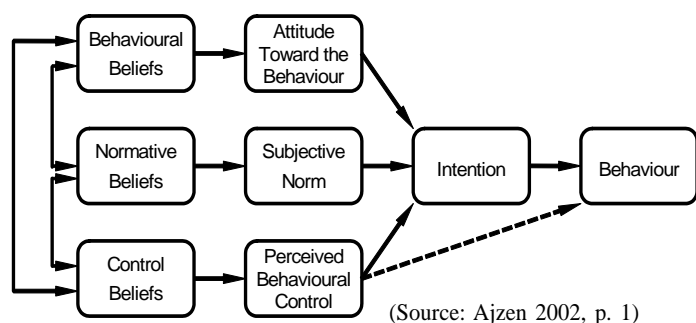


Figure 1: The Theory of Planned Behaviour

The TPB (see Figure 1) was developed as an extension of TRA by including the perceived behavioural control to account for conditions where people do not have complete control over their behaviour (Ajzen, 1988; 1991, 2002). Perceived behavioural control is defined as one's perception of how easy or difficult it is to perform the behaviour. It has been viewed as a construct conceptually related to Bandura's concept of perceived self-efficacy (see Bandura, 1977). Perceived behavioural control is determined by control beliefs which are “beliefs about the presence factors that may facilitate or impede performance of the behaviour and the perceived power of these factors” (Ajzen, 2002, p. 1).

## METHOD

### Participants and procedure

The final sample consisted of 72 Greek head teachers of 72 primary schools that used ICT for teaching and administrative purposes. The criteria selection of head teachers were: 1) Hardware and software had to be available in their schools for teaching and administrative purposes. 2) ICT had to be available for their teachers and pupils to use in teaching. 3) ICT had to have been available at their schools for at least two years. Questionnaires about the TRA and TPB variables were distributed to head teachers in March 2002 (Stage 1) and questionnaires about their behaviour in June 2002 (Stage 2).

### Questionnaire

The questionnaire contained items designed to measure the variables of the TRA and TPB. The questions on the final questionnaire were phrased and scaled exactly as recommended by Ajzen and Fishbein (1980) and Ajzen (2002).

**Intention.** The intention of head teachers to support the uptake of ICT in their schools was measured using three 7-point scales. (e.g. “I intend to support the uptake of ICT in my school during the next three months: extremely unlikely/extremely likely”). Responses to the three items were averaged to yield a measure of intention to support the uptake of ICT (Cronbach alpha=0.94).

**Attitudes towards the behaviour.** Head teachers were presented with the item: “For me to support the uptake of ICT in my school during the next three months is...”. Five pairs of adjectives were rated each on a 7-point scale (harmful/beneficial, pleasant/unpleasant, good/bad, worthless/valuable, enjoyable/unenjoyable). Responses to the five items were averaged to provide an attitude toward the behaviour measure (Cronbach alpha=0.90).

**Subjective norm.** Five different 7-point scales were used in order to measure head teachers' subjectives (e.g. “It is expected of me that (I should/I should not support) the uptake of ICT in my school during the next three months”). Responses were averaged to yield a measure of subjective norm (Cronbach alpha=0.91).

**Perceived behavioural control.** To assess head teachers' perceived behavioural control four different 7-point scales were used (e.g. “For me to support the uptake of ICT in my school during the next three months would be (impossible/possible). The average response to the four items served as a measure of perceived behavioural control (Cronbach alpha=0.80).

**Behaviour.** In order to assess the behaviour head teachers were asked to indicate the kind of support they provided to their schools for the development in the use of computers in education in the previous three months (i.e. March-June 2002). Twenty kinds of support were listed which were related to hardware, software, organization/administration and curriculum applications. The response alternatives were (1=none), (2=little), (3=average), (4=quite a lot), (5=a lot). The Cronbach alpha was 0.95.

### Data Analysis

Statistical analyses were performed using SPSS programme (version 12). The data was analysed in two stages. First, relationships among the components of the theories were described by Pearson correlations (two tailed). Second, in order to predict head teachers' intention and behaviour to support the uptake of ICT in their schools hierarchical regression analysis (the statistical procedure recommended by Ajzen, 1991) was used.

## RESULTS

Considering variables from the TRA and the TPB all variables were found to correlate with intention and behaviour. Intention ( $r=+.357$ ,  $p<0.01$ ) and perceived behavioural control ( $r=+.364$ ,  $p<0.01$ ) positively correlated with behaviour. Attitude toward behaviour ( $r=+.424$ ,  $p<0.01$ ) had the strongest correlation with intention, followed by perceived behavioural control ( $r=+.421$ ,  $p<0.01$ ) and subjective norm ( $r=+.386$ ,  $p<0.05$ ). This means that the more favourable the attitude and the subjective norm, and the greater the perceived behavioural control, the stronger is the head teachers' intention to support the uptake of ICT in their schools.

The next stage in the analysis was to conduct a hierarchical regression analysis on the data. In order to predict head teachers' intention, variables from the TRA were entered in the first block. Attitude and subjective norm explained 17.3% of the variance in head teachers' intention to support the uptake of ICT in their schools. Only attitude towards behaviour was a significant predictor of head teachers' intention ( $\beta=.300$ ,  $p=.047$ ). The addition of perceived behavioural control in the second block explained an additional 5% (Adjusted R Square=21.7%) of the variance in head teachers' intention. Perceived behavioural control was a significant predictor of intention ( $\beta=.281$ ,  $p=.031$ ) while the attitude toward behaviour ( $p=.058$ ) and subjective norm were not ( $p=.822$ ).

The results of the first block (i.e. intention) of hierarchical regression analysis for the prediction of behaviour showed that intention significantly explained 11.5% of the variance in head teachers' support of the uptake of ICT in their schools (behaviour). Intention was a significant predictor in head teachers' behaviour ( $\beta=.357$ ,  $p=.002$ ). When the additional component of the TPB, the perceived behavioural control, was entered into the second regression model (i.e. second block), the percentage of explained variance increased to 16%. The perceived behavioural control was the most important predictor of behaviour ( $\beta=.260$ ,  $p=.034$ ) and intention was the second important predictor ( $\beta=.248$ ,  $p=.042$ ).

## CONCLUSIONS

The results of the regression analysis showed that in the TRA model, head teachers' intention was significantly influenced by attitude toward the behaviour. This is in agreement with earlier studies in the literature of the TRA and TPB (see Ajzen, 1991). The findings of this study suggest that attitudes play an important role in head teachers' intention to engage in supporting the uptake of ICT in their schools. Therefore, in order to promote the use of ICT in Greek schools, the Ministry of Education should reinforce the positive attitudes of those who are already involved in supporting the uptake and to change the attitudes of those who view supporting the uptake of ICT less positively. Using the TPB model, intention was influenced by perceived behavioural control. This variable explained an additional percentage of the variance of intentions to support the uptake of ICT. Similar findings have also been found in other studies (see Armitage and Conner, 2001 and Godin and Kok, 1996). This means that during the introduction and implementation of the ICT innovation it is not enough for all schools to be equipped with the appropriate equipment and resources but also the individuals involved should have high perceived behavioural control.

The results of this research showed that both the TRA and TPB in general are useful theories for predicting and exploring the factors that

influence head teachers' intention and behaviour to support the uptake of ICT in their schools. Including perceived behavioural control in TPB model significantly increased the explained variation in comparison to the TRA model. However, the percentage of the explained variance was relative low. Previous TRA and TPB studies (e.g. Ajzen, 1991) have shown when the explained variance of intention or behaviour is low this means that other psychological (e.g. past behaviour) or external variables (e.g. demographic characteristics and personality traits) influence individuals' intention or behaviour. The regression models of the present study did not consider those variables and therefore the relatively explained variance of the regression models imply that there are other factors which can explain intention and behaviour.

**Notes:** [1] This research was conducted during my postgraduate studies at King's College London, University of London. The data were collected from 181 teachers that used ICT in their teaching, 72 head teachers, 43 district officers and 47 school counsellors of 72 Greek primary schools. Head teachers' data only are presented in this paper. This research was supported by the State Scholarships Foundation of Greece, the Leventis Foundation and the Principal's Overseas Hardship Fund of King's College London.

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