

Transfer Behaviour: Is Intention or Memory First? A Model of the Nearest Training Transfer Antecedents

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Abstract

In real life, there is a relationship between a person's intention and memory. In addition, both are crucial antecedents of behaviour. This study puts this concept under empirical analysis. Additionally, high loss of training memory (50% after 24 hours) is a critical problem. Therefore, a weak understanding of intention and memory unity (interchangeable relationship) would exaggerate the transfer behaviour problem. It should be noted that billions of dollars are lost because of the low training implications (transfer). In that context, the researchers raise the question of 'what comes first: intention or memory?' and conduct a holistic statistical analysis. They apply a quantitative method (self-report survey) to test five hypotheses of this study's variables: (i) intention to transfer (behaviour), (ii) training retention (memory), (iii) training transfer (behaviour). The study participants are 425 (population = 52,000) governmental (ministries) employees. The researchers derive and adapt the study questionnaire from reliable resources. They apply statistical analysis using PLS-SEM – SmartPLS software 3.0. All five hypotheses are accepted. This shows a highly interchangeable role of intention and memory against behaviour. However, the results analysis reveals that intention comes first, with a prominent presence of memory. Practically, it is suitable to understand intention and memory in combination, especially in the design phase. This would enhance the professionalism of behaviour control and effectiveness. For the theoretical tendency of the current study, the managerial implication is challenging. However, it opens the door for other interested researchers to specify a clear and smart solution for this case. In addition, this study has several values. It reconciles two theories in different fields: transfer model (training) with theory of planned behaviour (psychology). Mainly, it empirically describes the relationship between the most important behaviour antecedents (intention and memory). It helps to solve two practical problems: low training implication and high loss of training memory.

Keywords: training transfer, intention, behaviour, training retention, memory, theory of planned behaviour

1. Introduction

Implementation of training in the workplace, often termed 'training transfer', is a focus for many researchers and professionals internationally (Baldwin & Ford, 1988; Bhatti et al., 2013). Training implementation (transfer) is a preceding agent of organisational performance (Baldwin & Ford, 1988; Kirkpatrick, 1959).

In real life, there is a relationship between a person's intention and memory. Logically, they both affect each other in some way. Self-evident reasoning can justify this relationship. This study puts this concept under empirical analysis. The researchers investigate mainly 'the interchangeable relationship (overlapping) between intention to transfer and training retention; towards transfer behaviour'. Thus, they raise a question: 'What comes first, intention or memory, towards transfer behaviour?' (Figure 1). In practice, this investigation enhances the ability of practitioners and managers to understand the art of intentions and memory for specific targeted stockholders (trainees, customers, tourists, etc.).

These researchers investigate the interplay between two closely related concepts: (i) the training transfer model and (ii) the theory of planned behaviour (TPB). This hybrid model (theory triangulation) would enhance our understanding of the transfer situation. Rather than discussing the training transfer model (Baldwin & Ford, 1988)

and TPB (Ajzen, 1991) holistically, these researchers focus exclusively on the direct (close) antecedents and influencers of trainee behaviour: trainee intention and trainee memory. In this study, trainee intention is termed 'intention to transfer', and trainee memory is termed 'training retention'. The training transfer model includes training memory, but it does not use intention as one of its main constructs. Likewise, intention is a central construct in TPB, but it does not include memory as one of its constructs.

The 'transfer problem' (Baldwin & Ford, 1988) results in poor application of training in the workplace. What is applied in the workplace is just 10%-27% (Arthur et al., 2003; Chartered Institute of Personnel and Development, 2015; Ford, 2009; Georgenson, 1982; Griffin, 2010; Industry Report, 2000). These surprisingly low rates of workplace training application reconcile with high levels of recorded training expenditure, with annual training expenditure running at approximately \$100 billion in the United States, £38.6 billion in the United Kingdom, and 28.6 billion euros in Germany (American Society for Training and Development, 2006; Griffin, 2010; Seyda & Werner, 2012).

An additional practical problem in training transfer is the 'loss of training memory', often termed 'training retention'. According to Blanchard (2013), 50% of newly acquired skills and knowledge are lost within 24 hours of receiving training. Furthermore, according to Ebbinghaus (1964), only 33% of newly acquired information is retained by the trainee 1 day after training, which further reduces to only 21% after 1 month. These estimates demonstrate the serious levels of training memory loss (Ritter et al., 2011).

This study Mainly fills the literature gap related to the interchangeable relation between memory and intention. The researchers applied this in a theoretical stage (psychology) and in the practical context (mainly training transfer) and other fields such as tourism. Then they applied a specific methodology to fulfil the study's main purpose.

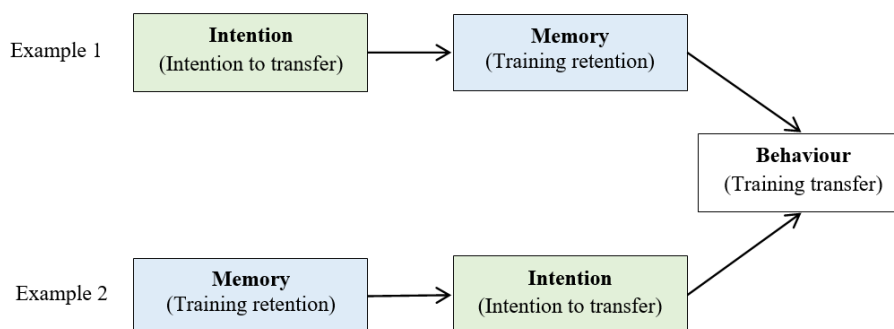


Figure 1. Interchangeable relation between memory and intention

This diagram describes two examples, related to the paper question. Example 1: A trainee who has an intention to apply training, he/she could not apply it; until he/she remembers the training event. Example 2: A trainee who remembers the training event, but he/she did not have an intention to apply training, consequently the transfer behaviour will fail. Generally, this figure clarifies the interplay between memory and intention.

2. Study Theory

The purpose of developing a theory is to understand, constitute (model), or test a phenomenon (Bryman & Bell, 2011; Creswell, 2013; Kerlinger, 1979). The researcher considers three types of theory (and model) in this study: (i) transfer model, (ii) TBP, and (iii) forgetting theory. Baldwin and Ford, in 1988, developed one of the most cited training transfer models after a comprehensive review of more than 40 studies (Baldwin & Ford, 1988; Blume et al., 2010; Grossman & Salas, 2011). Their training transfer model consists of 'trainee characteristics', 'training design', 'work environment', 'learning and retention', and 'generalisation and maintenance'.

The underpinning theories used in this study are the TPB (Ajzen, 1991), which is associated with 'intention to transfer', and the forgetting theory (Ebbinghaus, 1964), which is linked to 'training retention'. These theories are used to support the illustration of the study variables, thus advancing the understanding of the practical dimension of the conceptual model of this paper. It should be noted that forgetting theory is included in this study as a secondary supportive theory.

Cheng and Hampson (2008) mentioned that the TBP may help both academics and practitioners to understand training transfer. Indeed, many researchers depend on TBP to theorise their insights into training transfer processes (Al Eisa et al., 2009; Cheng & Ho, 1998; Cheng et al., 2015; Davis et al., 2002; Posthuma & Dworkin, 2000; Wiethoff, 2004). Fundamentally, TPB predicts behaviour (Davis et al., 2002); in this paper, the behaviour construct is represented as training transfer. Therefore, TPB can be used to explain transfer behaviour (Cheng et al.,

2015), and in particular, it can be used to explain training intention in relation to training transfer (Miller et al., 1960).

Generally, TPB consists of five constructs: (i) attitudes towards behaviour, (ii) subjective norms, (iii) perceived behavioural control, (iv) intentions, and (v) behaviour (Ajzen, 1991). When linking TBP to this study, the dominant underpinning factor is the intention construct, followed by the training transfer construct. Ajzen and Fishbein (2005) defined intention as representing the belief that a person will behave in a specific manner. It should be noted that, in the context of TBP, behaviour construct is associated with the training transfer (dependent variable) in the current study.

In general, behaviour is a complex construct; it is an activity in which a person may engage, and it is either observed or unobserved (Donahoe & Palmer, 1994). Owing to its complexity, it is not a simple matter to define or to quantify behaviour. Indeed, Ajzen and Fishbein (1980) described behaviour as an action that has a number of dimensions. Because, in this paper, the behaviour construct is represented as training transfer, it is useful to apply the detailed descriptions and dimensions of behaviour as described by Ajzen and Fishbein (1980). The complexity of transfer behaviour urges for more reliance on a behavioural theory. Thus, the researchers adopted TPB in this study because it plays a fundamental role in explaining the trainee intention and trainee behaviour correlation, particularly after the delivery of a training program.

3. Literature Review

The authors will start the literature review by illustrating the dependent variable (training transfer), thus getting straight to the core issue addressed in this paper. They will introduce and analyse each variable according to its fundamental identification and principles, identifying gaps in the literature for each variable.

3.1 Training Transfer

Put simply, training transfer is a specific behaviour (Kirkpatrick, 1959; Kraiger, 2002) that represents the behaviour of the trainee after attending a training program; it is the main dependent component of the training transfer model (Baldwin & Ford, 1988).

Despite several attempts to theorise the training transfer process (Baldwin & Ford, 1988; Holton, 1996, 2005; Kavanagh, 1998; Tracey et al., 1995), some scholars have called for intensified investigations (Bhatti & Kaur, 2010; Grossman & Salas, 2011). Indeed, training transfer is a complex process (Al-Eisa et al., 2009; Baldwin & Ford, 1988), and, despite the addition of new variables by a number of authors (for example, see Holton et al., 2000), the field remains highly active, particularly in different contexts and cultures (Dirani, 2011; Holton, 1996; Holton et al., 2000; Simosi, 2012). Taken as a whole, the field of training transfer has not yet reached full maturity, and this impedes its practical implementation in the workplace (Grossman & Salas, 2011; Kauffeld & Lehmann-Willenbrock, 2010).

3.2 Intention to Transfer

Many researchers have identified intention to transfer with relation to training transfer or transfer behavior (Al-Eisa et al., 2009; Cheng et al., 2015; Gegenfurtner et al., 2013; Rangel et al., 2015; Reynolds, 1993). Additionally, Blume et al. (2019) suggested considering intention as one of the main dynamic pillars of the transfer model. This confirms the importance of intention in the training transfer context.

When considering training transfer as a 'behaviour' (Kirkpatrick, 1959; Kraiger, 2002), intention to transfer is fundamentally relevant to transfer, especially when referring to the TPB (Ajzen, 1991). Thus, a holistic recognition of intention is associated with recognition of training transfer (Rangel et al., 2015). Intention to transfer is an essential precondition to the transfer process (Al-Eisa et al., 2009; Foxon, 1993; Grohmann et al., 2014). In the psychology context, the view of intention to transfer as the closest driver of training transfer is confirmed by Ajzen's (1991) theory (TPB). In the training transfer domain, Jaidev (2018) found that intention to transfer is positively associated with training transfer.

The inadequate investigation of the intention construct in the training transfer model is apparent in the transfer literature (Al-Eisa et al., 2009; Cheng & Hampson, 2008) to the extent that it is unclear how intention influences or promotes each stage of the transfer process (Al-Eisa et al., 2009). Few scholars measure the impact of the intention construct on the transfer process, or even as an antecedent of training effectiveness (Al-Eisa et al., 2009; Foxon, 1993).

There are, to the best of these authors' knowledge, no recent studies on the relationship between intention to transfer and training retention, mainly in the training transfer literature. It should be noted that a few authors mention this relationship in a highly general sense (for example, see Gegenfurtner et al., 2013; Miller et al., 1960).

In other domains, this relation is a concern in psychiatric illness; it appears that intention (implementation intention) has an effect on schizophrenia patients' memory (prospective memory) (Chen et al., 2019).

The present study complements the current literature in that the authors use cognitive psychology to fill the gap in knowledge regarding the relationship between intention to transfer and training retention. In so doing, they demonstrate that the cognitive components of retention (memory) and attention interact (Figure 2). Retention (memory) can be regarded as being partially represented by attention, and it is common that attention and memory are closely related (Unsworth & Engle, 2007).

Cognitive ability consists of three components: memory, attention, and executive function (Owen et al., 2010). Thus, intention and attention are inherently linked (Shapiro et al., 2006). It is expected that a trainee who has a strong intention to apply training would pay a considerable level of attention during training; this would, in turn, improve their memory of the training content. Supporting this notion, Bird (1988) indicated that intention directs attention towards a certain matter.

Specifically, intentions have a robust relation with long-term memory (Achtziger et al., 2012). Moreover, intention affects working memory (Meeks et al., 2015). Marsh et al. (1998) mentioned that, when intention is cancelled, memory is inhibited. Likewise, Chasteen et al. (2001) concluded that intention facilitates memory. Away from the traditional view of memory, retention is not only a process of forgetting matter through time but also a complex phenomenon related to several factors (Arthur & Day, 2020). The current researchers assume that intention is one of these factors.

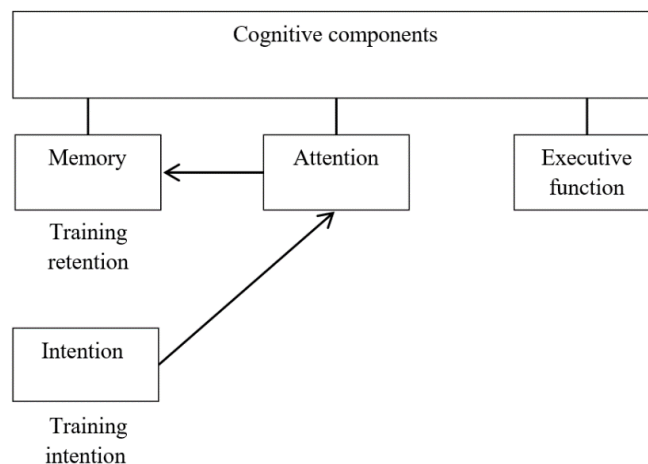


Figure 2. Relationship between training intention and training retention (memory) according to cognitive psychology (Unsworth & Engle, 2007)

3.3 Training Retention

The identification of training retention requires a specific psychological concept in the training transfer process. In psychology, 'retention' is one of a group of terms related to memory (Deffenbacher et al., 2008; Ong & Tasir, 2015; Sakul-Thanasakdi, 2001); in training transfer, retention is represented as the level at which training content is remembered (Velada et al., 2007).

It is important to gain an advanced understanding of the notion of retention by first describing a number of psychological perspectives. Training retention represents the retention of training competencies in memory (Velada et al., 2007). Put simply, training retention represents the process of remembering a training activity (Ong & Tasir, 2015; Velada et al., 2007). Additionally, it is a fundamental promoter of behaviour (Pierce & Cheney, 2013). Thus, retention, or learning memorisation, is a matter of serious and international concern (Austin, 2009; Burke & Hutchins, 2007; Ritter et al., 2011; Wexley & Latham, 2002).

Several authors have noted that training retention is positively and directly related to training transfer (Baldwin & Ford, 1988; Bhatti et al., 2013; Govaerts & Dochy, 2018). This is consistent in other fields, such as tourism management, in which tourism memories are significantly related to intention (Kim et al., 2022). For instance, tourism photographs have a significant reflection on autobiographical memory and ultimately have an effect on revisit intention (Zhang et al., 2021).

Likewise, other researchers have assumed that an ineptitude for training transfer is a consequence of poor training retention (May & Kahnweiler, 2000). When seeking literature that supports training transfer theory, Bhatti et al. (2013) noted a sparsity of studies dealing with training retention, reflecting similar observations made previously

by Bhatti and Kaur (2010). Holistically, retention research that relates to complex skills is limited, specifically outside the medical field (Vlasblom et al., 2020). Thus, in studying training retention, this paper's authors make an important contribution to the scant training transfer literature.

3.4 Training Intention and Training Retention

Generally, it is speculated in this paper that the relationship between memory and intention is interchangeable towards transfer behaviour. This speculation is supported by several authors in several fields such as clinical studies (Khojraty et al., 2015), tourism (Ali et al., 2016; Martin, 2010), and, generally, in psychology (Achtziger et al., 2012; Brandimonte et al., 2014; Goschke & Kuhl, 1996, p. 54), which shows that the relation of memory and intention is a cause for great concern. It should be noted that Loureiro (2014) empirically investigated the relation between memory and intention and found it significant.

Failure of memory (information recall) leads to intention hampering (Brandimonte et al., 2014). For instance, a person cannot intend to act unless they can remember the information that relates to that action (Goschke & Kuhl, 1996, p. 54). This case named as 'delayed intention' (Brandimonte et al., 2014, p. 25). Therefore, Ali et al. (2016) found, in the tourism domain, that memories have a significant relation with intention. This kind of memory, which forms a future intention, is called prospective memory (McFarland & Glisky, 2012). Going into detail, 'memory for intention' is a widely concerning issue (term) in psychology (Achtziger et al., 2012; Brandimonte et al., 2014; Chasteen et al., 2001; Cohen et al., 2001; Loftus, 1971). Achtziger et al. (2012) reported that few investigations are implemented to describe the effect of memory on intention in terms of forming and applying intention. According to the recent literature review, few or even no studies (starting from 2016) in the training transfer literature concern the 'intention' and memory–training retention' relation.

Finally, the previous literature confirms the view of this paper's authors that memory and intention have an interchangeable relationship. Additionally, this kind of investigation would increase the understanding of these variables in the training transfer domain.

3.5 Proposed Study Framework

Using findings from the existing training transfer literature, the authors propose a unique conceptual model, as illustrated in Figure 4. This conceptual model is a hybridisation of Baldwin and Ford's transfer model (1988) and Ajzen's TPB (1991).

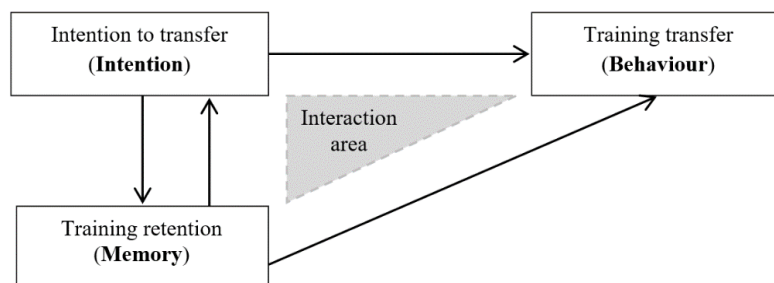


Figure 3. Proposed hybridised conceptual model

4. Methodology

The researchers use the 'quantitative method' approach in this study. The quantitative method is selected when a mature theory exists, and it is particularly focused on behaviour (Bryman & Bell, 2011). The authors apply five hypotheses related to three variables: (i) intention to transfer, (ii) training retention, (iii) training transfer (obtained from training transfer model and TPB).

4.1 Study Population

The study population (n=52,000 – <http://www.fahr.gov.ae>) was made up of employees from the United Arab Emirates (UAE) governmental ministries (eight different ministries: interior, education, health, foreign affairs, community, finance, energy, and state for federal national council affairs). This population of employees had attempted >1 training program within a 1-year period (Choi & Park, 2014 stated this criterion). Several job types were included (managers, executives, and technicians) (Table 2). The representative sample included 425 participants, of whom 377 participants is the minimum sample size (Krejcie & Morgan, 1970).

4.2 Study Hypotheses

The hypotheses are designed to answer the study question (Is intention or memory first?). In general, hypotheses should describe the interaction area of the study variables. For this, the authors include a mediating hypothesis, which relates to the interchangeable relation of 'intention' and 'memory'.

The study hypotheses are as follows:

4.2.1 General Hypotheses

H1: Intention to transfer has a positive influence on training transfer.

H2: Training retention has a positive influence on training transfer.

4.2.2 Mediating Hypotheses

H3: Intention to transfer influences training transfer, mediated by training retention.

H4: Training retention influences training transfer, mediated by intention to transfer.

4.2.3 Conclusion Hypotheses

Finally, in an attempt to disentangle the confusion regarding how intention and retention affect transfer behaviour (whoat comes first?), a final hypothesis is proposed:

H5: There is an interchangeable relationship between intention to transfer and training retention towards transfer behaviour.

Ultimately, these hypotheses revolve around one topic, which is 'describing the state of the interaction of the study variables (intention and memory) versus transfer of training (behaviour)'; Figure 3 describes these relations.

5. Study Questionnaire

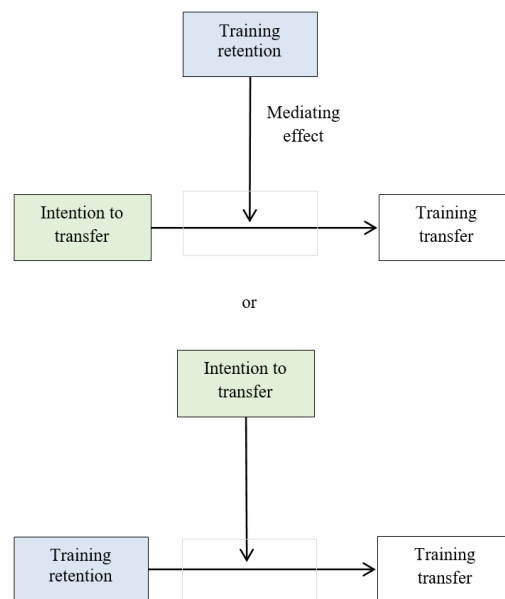


Figure 4. Mediating effects options

This diagram summarizes the mediating hypotheses situation.

The questionnaire includes two aspects: demographic information and study items. The authors applied a five-point Likert scale with five levels (strongly disagree=1, disagree=2, neutral=3, agree=4, and strongly agree=5) (Jamieson, 2004; Norman, 2010). They obtained the study variables from training transfer psychology literature (Ajzen, 1991; Tesluk et al., 1995; Xiao, 1996). Supportive studies were recalled to adapt the study items (see, for example Bhatti et al., 2013; Blume et al., 2010; Velada et al., 2007).

Particularly, the researchers acquired the intention items from Ajzen (2005) ('I intend to . . .', 'I plan to . . .', and 'I will try to . . .'). Additionally, and to increase the reliability, the authors added two items to the former three items by replicating the mentioned items. Finally, they mainly obtained the training retention items from Velada et al. (2007) (using the phrase 'I still remember . . .'). All items' details are clearly presented in Table 1.

5.1 Amendment and Refining of Study Items

Study items must be amended and refined before generalising them to the whole population. Back translation method is used to achieve a precise translation from English to Arabic (Banville et al., 2000; Brislin, 1970). Then the researchers conducted qualitative testing via a ‘pretest’ evaluation to enhance the study items (Sekaran & Bougie, 2013). Following the pretest, the researchers conducted a pilot test (quantitative testing) to ensure items’ reliability (Piaw, 2012).

Table 1. Study Operational Definition and Items

Study Variable	Variable Definition	Definition Sources	Study Items	Study Items Sources
Intention to Transfer	Trainee willingness to plan and to try to exert an effort to apply learnt material in the workplace.	Ajzen, 1991; Cheng and Hampson, 2015	5	Ajzen, 2005
Training Retention	The degree to which the trainee retains (memorises) the content after training is completed.	Deffenbacher et al., 2008; Ong & Tasir, 2015; Sakul-Thanasakdi, 2001; Velada et al., 2007	4	Velada et al., 2007
Training Transfer	Transfer and application of knowledge, skills, and attitude as workplace behaviour.	Al-Eisa et al., 2009; Burke and Saks, 2009; Ford and Weissbein, 1997; Kraiger, 2002	6	Tesluk et al., 1995; Xiao, 1996

Note. Ajzen (1991) was the main source for the ‘intention’ items. Ajzen founded the most remarkable psychological theories (Cheng & Hampson, 2008).

5.2 Data Collection and Statistical Analysis

A descriptive introduction was prefaced by the study questionnaires. The questionnaires were directed to the study population by formal email. Note that the data collection involved a cross-sectional approach. A total of 528 respondents was achieved. Finally, 425 responses were suitable to be applied in the statistical analysis. The authors analysed study data via SmartPls software 3.0 (Hair et al., 2016).

6. Results

The researchers expressed the study results by two types of descriptions: descriptive and inferential statistics.

6.1 Descriptive Statistics

The descriptive statistics (Table 2) reflect an appropriate sample with its diversity. The descriptive statistics are also shown in Table 3 (mean and SD).

Table 2. Demographic Information and Respondent Profile (n=425)

Demographic	Details %
Bachelor’s	61
Master’s	13
Diploma	12
Secondary	11
Ph.D.	3
Less than secondary	1
Managerial job	41
Technician	34
Managerial job and technician	14
Managerial and field job	8
Field job	3
Male	36
Female	64

6.2 Correlations, Reliabilities, and Hypothesis Testing

Considerable reliability (Cronbach's alpha > 0.70) and discriminant validity is achieved (Table 3). Standards were obtained based on Hair et al. (2016).

Table 3. Latent Variable Correlations

Variable	Mean	SD	Training Retention	Intention to Transfer	Training Transfer
Training Retention	3.687	0.95	(0.947)		
Intention to Transfer	4.0896	0.87	0.639 *	(0.923)	
Training Transfer	3.5965	1.02	0.330 *	0.409 *	(0.922)

Note: **p*-values < 0.05; α values shown in parentheses. These results were set when the intention to transfer was considered as a mediator. It should be noted that $R^2 = 0.449$.

Model fit reflects the case in which the study conceptual model fits the empirical data (Hair et al., 2016). In the current study, the authors conducted two types of model fit: the standardised root mean residual (SRMR) method (Hair et al., 2016) and normed fit index (NFI) method (Afthanorhan, 2013; Bentler & Bonett, 1980; <https://www.smartpls.com>). As a result, a good fit SRMR=0.055 and NFI=0.912 (baseline SRMR=< 0.08, NFI > 0.90) was established.

Table 4. Hypothesis Acceptance Status and Mediating Analysis

No.	Hypothesis Statements	Path Coefficients/ Specific Indirect Effects (for Med. & Mod. Effect)	<i>t</i> -Values	<i>p</i> -Values	Confidence Intervals Corrected		Acceptance Status
					2.50 %	97.50 %	
<u>General Hypotheses</u>							
H1	Intention to Transfer -> Training Transfer	0.409*	5.987	0.000	0.294	0.518	Accepted
H2	Training Retention (Memory) -> Training Transfer	0.33*	4.862	0.000	0.22	0.444	Accepted
<u>Mediating Analysis</u>							
H3-Med. IT	Training Retention (Memory) -> Intention to Transfer -> Training Transfer	0.262*	6.139	0.000	0.179	0.352	Accepted
H4-Med. TR	Intention to Transfer -> Training Retention (Memory) -> Training Transfer	0.211*	4.593	0.000	0.123	0.305	Accepted
<u>Conclusion Hypotheses</u>							
H5	There is an interchangeable relationship between intention to transfer and training retention towards transfer behaviour.						Accepted

Note: **p*-values < 0.05. Med: Mediating. IT: Intention to Transfer. TR: Training Retention.

7. Discussion

The study discussion is concentrated mainly on the variables' relation results. The study hypotheses are the centre of the discussion.

7.1 Intention to Transfer and Training Transfer

Intention to transfer has a significant and positive influence on training transfer. This result confirms the TPB concept (Ajzen, 1991). In the training transfer domain, many authors' results are consistent with the current study's result (Cheng et al., 2015; Friedman & Ronen, 2015).

7.2 Training Retention and Training Transfer

Training retention (memory) is positively and directly related to training transfer, particularly in the domain of training transfer (Baldwin & Ford, 1988; Bhatti et al., 2013). However, other fields demonstrate the same results (see for example, Achatziger et al., 2012; Ali et al., 2016; Brandimonte et al., 2014, Goschke & Kuhl, 1996, p. 54; Khoyratty et al., 2015; Martin, 2010).

7.3 Mediating Status

As mentioned in major references (mainly on TBP [Ajzen, 1991] and transfer model [Baldwin & Ford, 1998]), both intention and memory have a central (mediating) role in the behavioural context. An advanced illustration is shown in Table 5 for the purpose of answering the study question 'Is intention or memory first?'

Table 5. A Holistic Analysis for Answering the Study Question 'Is Intention or Memory First?'

Criteria	Training Retention (Memory)	Intention to Transfer	Comments
The significance of the relation (towards behaviour 'training transfer')	Sig.	Sig.	Intention has a higher strength on behaviour 'training transfer' than memory.
The strength of the variable (path-coefficients towards behaviour 'training transfer')	0.33	0.409	
The significance of the relation (mediating)	Sig.	Sig.	Intention has a slightly higher strength than memory.
Mediating specific effect (strength)	0.211	0.262	
Importance-performance matrix analysis (practical effect – analysis)	0.329	0.411	Intention has a higher practical effect on behaviour 'training transfer' than memory.

To sum up, the major result of this study is that intention and memory have a highly overlapping interaction against behaviour. However, intention comes in a relatively more advanced rank than memory. The mediating strength of intention is higher than memory (intention = 0.262, memory = 0.211). In addition, intention has a higher strength than memory (intention = 0.409, memory = 0.330) against behaviour. Further illustrations are presented in Table 5. That said, intention and memory have a mutually significant high path-coefficient (0.639). This also reveals that both variables affect each other regardless of their relation with transfer behaviour. From another perspective, Figure 5 summarises the situation of intention and memory towards behaviour.

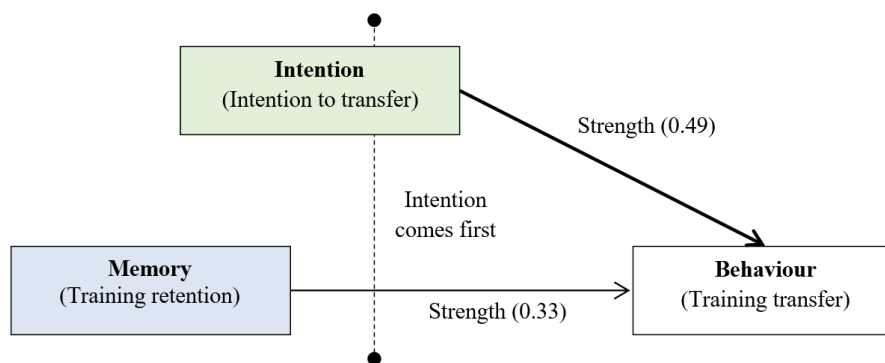


Figure 5. What comes first?

This figure represents a summary of answering the research question 'What comes first?'

Ultimately, intention comes first, with a prominent presence of memory. Thick arrows symbolise the relation strength 'path-coefficient'.

8. Managerial Implications

In general, anyone who deals with any kind of behaviour (management, training – educational, leadership, tourism, trade, customer services, behaviour, etc.) has to understand the intention and memory in combination (how do both work together?). It is crucial to consider this in the planning phase of any behavioural design. This would enhance the professionalism of behaviour control. Training design would be the crucial practical feature of intention and memory. Training design has a dominant role in training transfer (Alshaali et al., 2018; Gyimah, 2015; Nikandrou et al., 2009). Therefore, training program designers should consider intention and memory in the design phase.

The study has a theoretical tendency, which makes recommending a managerial implication problematic. It is easy in tourism or in customer service to apply an attractive action to affect memory and intentions. However, the complexity of training transfer makes it difficult to implement a specific approach to affect specifically the memory and intentions in parallel. In training transfer a managerial implication could be achieved accurately via a proven method related to memory and intention separately. Intention could be enhanced by affecting three inputs (attitudes towards behaviour, subjective norms, and perceived behavioural control) (Ajzen, 1991). To simplify this, three strategies would enhance training intentions: (i) providing information to trainees prior to the training program, (ii) trainees having some accountability for learning with their supervisor, and (iii) trainees perceiving a training program as mandatory (Baldwin & Magjuka, 1991). Training memory could be achieved by planning and applying two techniques: (i) 'spacing effect – retention interval', which consists of repetition of the information learned during specific periods of time (Ebbinghaus, 1964), and (ii) 'over learning', which represents the repetition of applying the acquired information; the greater the repetition, the more stable the information (Nijman et al., 2006, Ritter et al., 2011). Practically, these proven techniques would avoid information decay (Ebbinghaus, 1964) to a remarkable degree. Therefore, this could save a tremendous amount of money related to training transfer (Georgenson, 1982).

9. Study Limitations and Suggested Research

The results of the current study cannot be fully generalised to other fields because of its specific scope (training transfer in public sector). Other researchers could examine the study hypotheses in other domains, such as 'customer behaviour'. In this study we used people's impressions (subjective survey) to evaluate the results; thus we recommend using an objective (numerical) approach. For instance, digital databases (customer services) for a specific field could be applied. The current study could be described in terms of its theoretical tendency. Therefore, providing a managerial implication is challenging. However, it opens the door for other interested researchers to specify a clear and smart solution for this case.

10. Conclusions

This study demonstrates the importance of understanding the interaction between trainee intention and trainee memory against transfer behaviour. In addition, the proposed hybrid model (TPB × transfer model) aims to clarify a holistic perspective on the missing constructs (intention and memory) from both TPB and transfer model.

To address the current lack of empirical investigation into the combination of intention and memory, in this study we investigated a number of dimensions and relationships between intention and memory. Several kinds of relationships have been suggested, raising the question of 'What comes first: intention or memory?' and 'What is the nature of these relationships?', particularly under the mediating perspectives. However, mediating perspectives are not well understood for this situation. Accordingly, this study demonstrated that there is an interchangeable (overlapping) relationship between intention and memory against behaviour. Nevertheless, intention comes first, with a prominent presence of memory. Future researchers could apply this concept in several domains to emphasise the study arguments. In practice, training practitioners should consider trainees' intentions and memory in both designing and applying training programs. Yet, the design phase is the dominant factor to be considered. This would enhance the professionalism of behaviour control and effectiveness.

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