

Development and validation of a web-based survey to assess medical radiation workers' behaviour of using personal dosimeter for occupational radiation monitoring

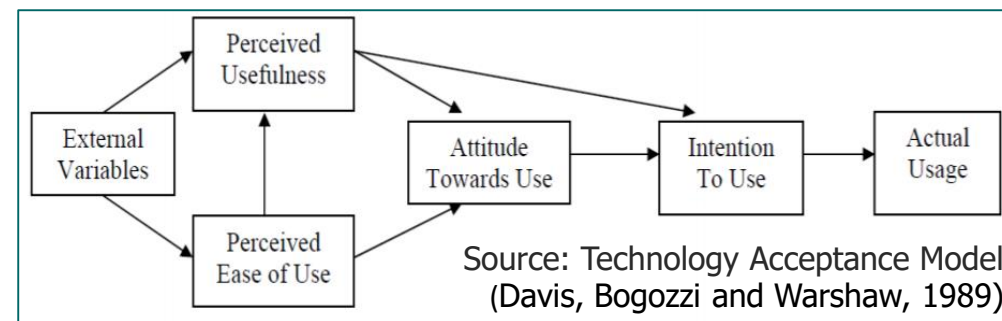
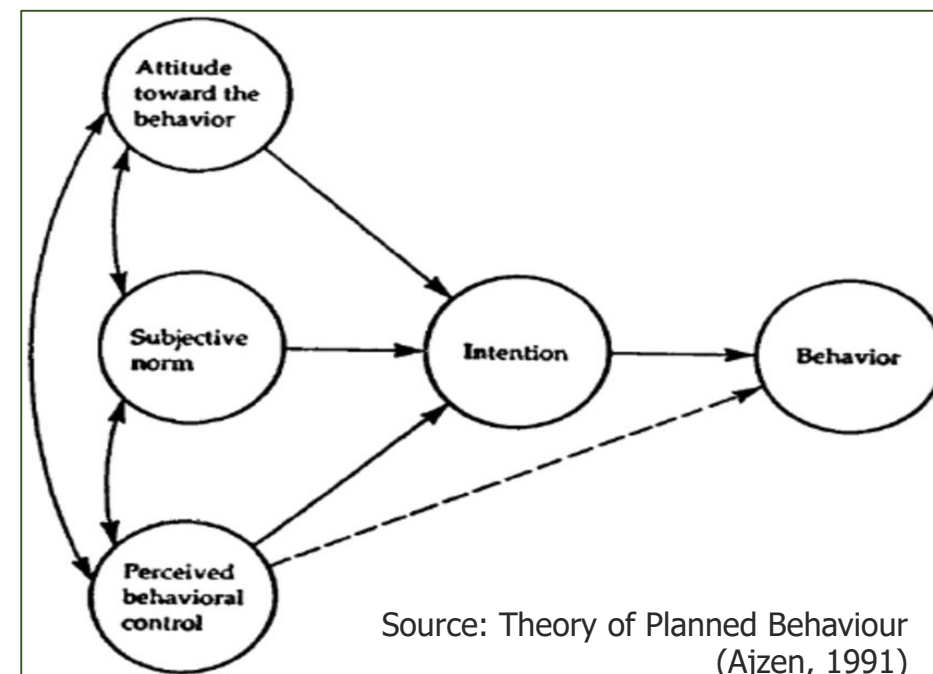
<30% returned & collected dosimeter
(unpublished, 2016)

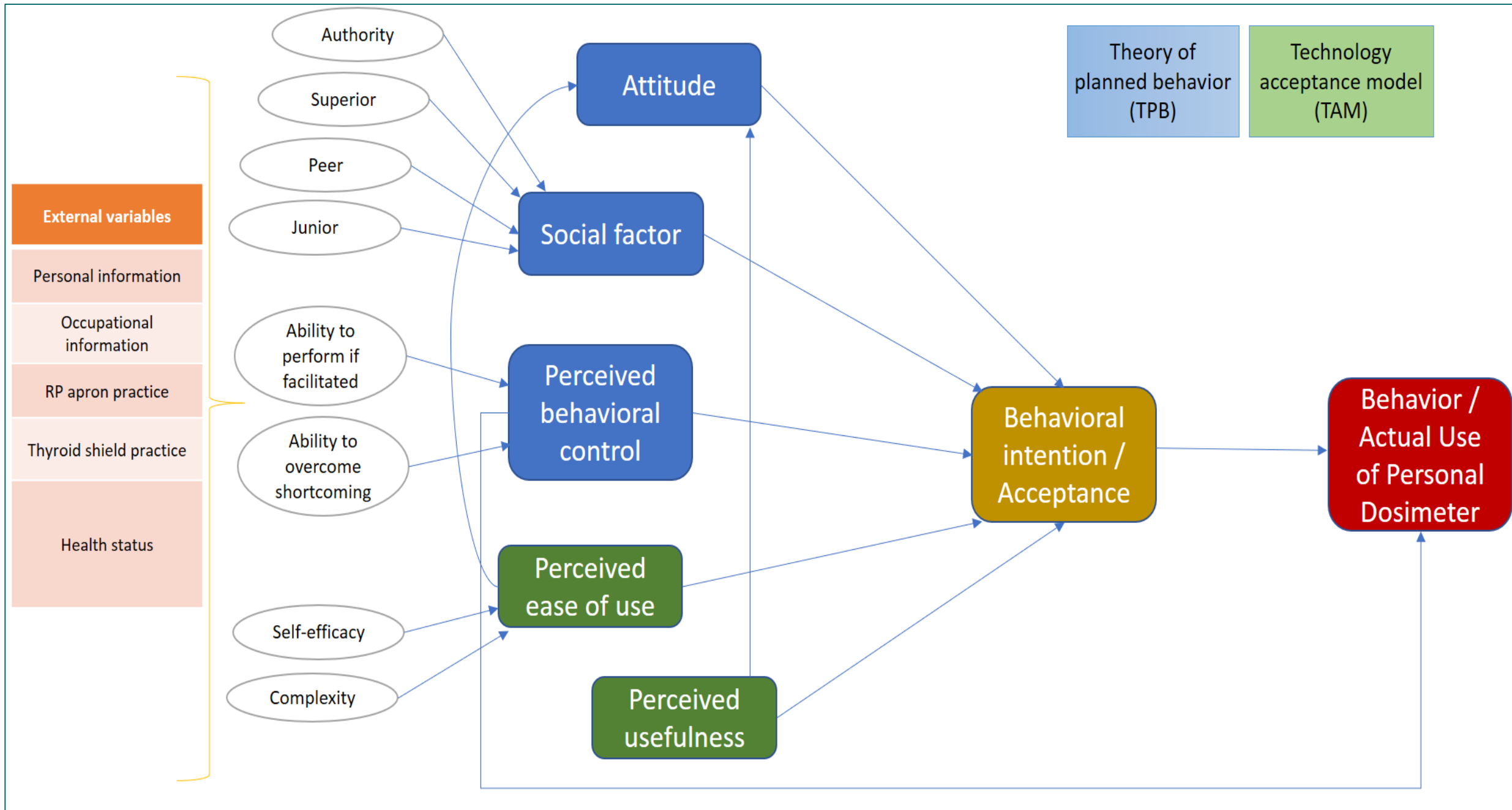


Image courtesy: Landauer



Image courtesy: Nancy Brown McCauley





The integration of **TPB** and **TAM** constructs was found to be **reliable** and **valid** to explain the **use** of personal **dosimeter** among MRWs

Domains: Social factor, Usefulness, Facilitator, Barrier, Self-efficacy, Complexity & Attitude

DIMENSION/CONSTRUCT: Social factors (SF)

Item	Item number	I-CVI	Expert's comment/suggestion	Amendment status for item	Final arrangement of item	
I will definitely use a dosimeter during work, in the presence of...	my immediate supervisor	SF1	0.83	-	Accepted	SF1

Table 3. Exploratory factor analysis for items in the survey to assess the behaviour of using personal dosimeter for radiation monitoring.

Original domain	Domain after EFA	Item	Factor						
			1	2	3	4	5	6	7
Cronbach's Alpha for each domain			.966	.867	.836	.857	.859	.805	.694
Social Factor (n=6)	Social Factor (n=6)	intern/practical students	.941	-	-	-	-	-	-
		my supervisee	.940	-	-	-	-	-	-
		an officer/a medical physicist in charge	.937	-	-	-	-	-	-
		my colleagues	.929	-	-	-	-	-	-
		my immediate supervisor	.926	-	-	-	-	-	-
		an auditor	.858	-	-	-	-	-	-
Perceived Usefulness (n=4)	Perceived Usefulness (n=4)	The detection of unusual over-exposure is good to investigate any faulty practice/procedure at the workplace	-	.903	-	-	-	-	-
		Using a dosimeter enables me to detect unusual over-exposure at work	-	.835	-	-	-	-	-
		Knowing my monthly dose exposure helps me in working safely at work	-	.821	-	-	-	-	-
		Using a dosimeter enables me to keep track of my monthly dose exposure	-	.786	-	-	-	-	-
Perceived Behavioural Control (n=10)	Ability to perform if facilitated (n=4)	it has a more robust clip	-	-	.856	-	-	-	-
		it is waterproof	-	-	.832	-	-	-	-
		I am being informed of the result every month without fail	-	-	.808	-	-	-	-
		someone is supervising the use of it	-	-	.723	-	-	-	-
	Ability to overcome shortcomings (n=3)	I work only with lower-exposure procedures	-	-	-	-	-	-	.786
		it only provides a delayed monitoring result	-	-	-	-	-	-	.775
		I might be ban from work for over-exposure	-	-	-	-	-	-	.761
Perceived Ease of Use (n=6)	Self-efficacy (n=3)	not lose my dosimeter	-	-	-	.913	-	-	-
		use a dosimeter correctly (position and direction)	-	-	-	.871	-	-	-
		remember to use a dosimeter every day at work	-	-	-	.822	-	-	-
	Complexity (n=3)	extra effort	-	-	-	-	-	.877	-
		strong willingness	-	-	-	-	-	.825	-
		extra time	-	-	-	-	-	.804	-
Attitude (n=5)	Attitude (n=3)	disturbing during work	-	-	-	-	.963	-	-
		uncomfortable	-	-	-	-	.904	-	-
		difficult to practice	-	-	-	-	.766	-	-

Extraction Method: Principal Component Analysis; Rotation Method: Promax with Kaiser Normalization.

Note: EFA= Exploratory factor analysis



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items

