



Retail e-learning assessment: motivation, location, and prior experience

Retail e-learning
assessment

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Abstract

Purpose – The purpose of this paper is to provide a more complete theoretical model of retail e-learning assessment module use. The location (i.e. onsite versus offsite) of assessment and prior experience is treated as moderators between motivation/intention, uses, and value; and differences between subjective and objective value are investigated.

Design/methodology/approach – An exploratory, semester-long, single-course experiment was conducted using students ($n = 37$) from Mexico and the USA enrolled in a retail-focused marketing course at a university located near the border between the two countries.

Findings – Extrinsic and intrinsic motivations predict participants' use of e-learning assessment modules. The objective and subjective value of assessment is strongly impacted by the individual's prior performance. Location of assessment moderator is significant.

Research limitations/implications – In addition to focusing on intrinsic and extrinsic motivations, retailers should also consider the possibility that prior experience and location of assessment can affect use and value. Prior experience levels of the participants were found to affect use. Retailers are cautioned not to assume mistakenly that increased use of e-learning assessment modules results in lower performance. Rather, people that performed better in the past are less likely to use the modules. It is also found that when individuals can take the assessments offsite (e.g. at home, on the road), there is a positive impact on both objective and subjective performance. Retailers should examine the potential of permitting employees to take assessments from home (over the internet) or other remote locations.

Originality/value – The paper highlights the fact that many retailers have adopted e-learning assessment technologies that include options for either onsite assessment (e.g. kiosks/PCs in human resource/training rooms) or offsite assessment that operations management and corporate staff can perform outside the office. However, little is known about what motivates people to use e-learning assessment, and how it affects performance across these two locations for assessment. Moreover, knowledge of how location of use influences the relationships is currently missing.

Keywords Assessment, E-learning, Computer-based learning, Motivation (psychology), Retail marketing

Paper type Research paper

Retail training through e-learning

E-learning accounted for < 30 per cent of user training time in vocational training across the European Union a decade ago (Cedefop, 2001); today, many retailers have adopted computer-based learning (CBL) modules for training and/or assessment (Skillsoft, 2007). "Module" refers to a self-paced, distinct segment of a training/assessment program[1]. For example, more than two-thirds of Carrefour's workforce completes e-learning



training/assessment modules (Carrefour, 2008). Even retail industry associations, such as the National Retail Federation (www.nrf.com), have adopted e-learning training. Further, some retailers such as Tesco have started using government-approved, e-learning module-based degrees for employees who have just finished high school or not finished college (Woods, 2008).

Vendors of e-learning modules often emphasize the benefits of using the modules, including: flexibility around shifts and busy sales peaks, more customizable and job-specific training, self-pacing, consistent quality, availability in different languages, and – importantly – the ability to provide instant assessment to participants and multiple levels of management in the store, district, region, and headquarters. E-learning modules permit retailers to test employees knowledge on a variety of topics ranging from:

- (1) evaluating the extent to which employees have understood new retail processes (e.g. functions/operations, customer service, and accounting) or cultural elements (e.g. dress code, customer greetings, company history);
- (2) meeting health or safety legislative requirements in handling food, cleaning supplies, pharmacy, and other merchandise categories; or
- (3) operating machinery such as electric pallet jacks, forklifts, scissor lifts, and trash compactors (King, 2007).

At times, such e-learning assessment may even be required due to litigation. For example, a recent settlement between Walmart and the United States' Equal Employment Opportunity Commission requires Walmart to have all store greeters, assistant managers, and store managers complete a CBL assessment module on a new policy regarding service animals for people with disabilities (*WSJ*, 2008).

While many potential benefits of e-learning assessment modules exist for retailers, unfortunately little research has been undertaken to explore the value generation process of e-learning assessment modules. Of the few studies that have begun investigating e-learning modules, many propose that most module programs are inefficient because they focus on specific module or technologies rather than on employee learning (Guralnick, 2002; Young, 2001). Barcala-Fernandez *et al.* (2000) find that retail managers' evaluation of training quality, in general, focuses primarily on four dimensions: reliability (e.g. up-to-date, clarity), convenience, tangibles (e.g. handouts, audio-visual materials), and practical content. While e-learning modules may receive high marks on these four dimensions, little is known about how the modules actually work. That is, what factors might improve retail employee's use of the e-learning modules and how do they impact assessed performance? Rabak and Cleveland-Innes (2006, p. 117) proposes that "a crucial factor for the success of an e-learning initiative is employee motivation." Barcala-Fernandez *et al.* (2000) and Huddleston and Good (1999) also find that motivation represents an important dimension to consider in designing and evaluating retail training or assessment modules. This dimension appears significant when considering the differences in general education and on the job assessment across countries.

The aim of this work is to present a more complete view of the conceptual relationship between the antecedents of retail e-learning assessment use and the outcomes of the use. We discuss:

- the contrast between extrinsic motivation and intrinsic motivation as they affect the use of retail e-learning assessment modules;
- the role of location (i.e. onsite versus offsite) in use of e-learning assessment modules;
- the perceived value generated by users from the use of e-learning assessment modules; and
- the relationship between users' perceptions and objective outcomes.

This paper begins with a review of concepts and hypotheses leading to the proposed conceptual framework. Then, the methods and results of an exploratory study are presented and discussed. Finally, we outline potential implications for retail practice and managers.

Conceptual framework

In this section, we outline logic behind the proposed motivation-to-use framework as shown in Figure 1. Drawing upon extant literature in retailing, psychology, education, marketing, and information systems, we provide hypotheses on the linkages between motivation and intention, intention and use, and use and value, as applied to retail e-learning assessment modules.

Participant motivation

Retailers invest in e-learning modules because they hope it improves employee performance. Of course, the module has to be actually used by employees before it could have the proposed effect. While retailers normally require employees to participate, other important factors influence e-learning module use including employees' degree of motivation.

According to Vallerand *et al.* (1992, p. 1004), "One of the most important psychological concepts in education is certainly that of motivation." We believe this argument holds true for retail education, whether in a university, operations, or corporate setting. This study models motivation as a multidimensional construct, consistent with a growing stream of research that distinguishes between extrinsic motivation and

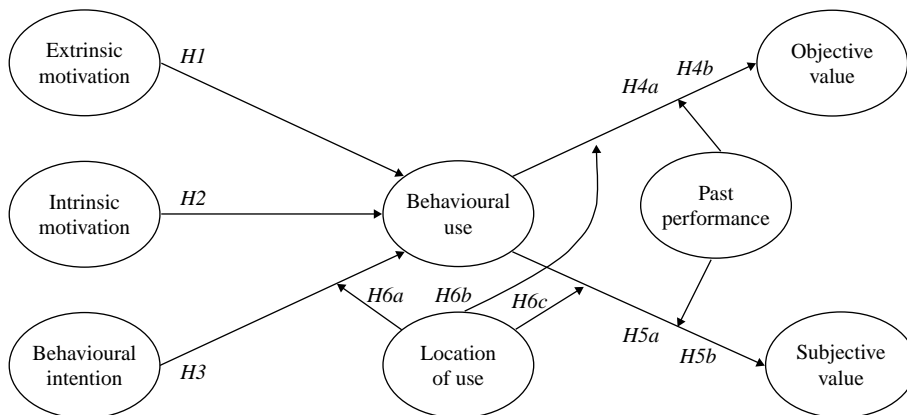


Figure 1.
Conceptual model of retail
e-learning assessment
effectiveness

intrinsic motivation (Davis *et al.*, 1992; Deci, 1975; Lee *et al.*, 2005; Levin and Hansen, 2008; Vallerand *et al.*, 1992).

A person could maintain higher degrees of both extrinsic motivation and intrinsic motivation, lower degrees of both extrinsic motivation and intrinsic motivation, or higher and lower levels of each motivation. For example, two individuals could enjoy using e-learning assessment module and a third individual could not enjoy using it. The first individual could perceive an external reward (e.g. bonus, promotion, or certificate) as a bonus while the second individual could perceive the same external reward as superfluous. The third individual could be more likely to use the e-learning assessment module only in the presence of an external reward. Thus, individuals' motivations appear more complex than previously thought, which is why we measure, hypothesize, and model them separately.

Vallerand *et al.* (1992, p. 1006) refer to extrinsic motivation as "a means to an end and not an end for their own sake." The use of e-learning modules (e.g. means) leads to a desired subjective or objective outcome (e.g. end). Related, Davis *et al.* (1992, p. 1111) state extrinsic motivation is the "performance of an activity because it is perceived to be instrumental in achieving valued outcomes." We believe that retail employees could perceive a relationship between their performance on module assessment and their overall job performance. Thus, most retail employees with higher levels of extrinsic motivation would try to use e-learning modules compared to those retail employees with lower levels of extrinsic motivation. Thus, we hypothesize:

H1. Extrinsic motivation positively affects behavioural use of the e-learning assessment module.

Intrinsic motivation is defined as "the performance of an activity for no apparent reinforcement other than the process of performing the activity per se" (Davis *et al.*, 1992, p. 1112). Related, Vallerand *et al.* (1992, p. 1004) refer to intrinsic motivation as "the pleasure and satisfaction derived from participation." Thus, intrinsic motivation appears quite different from extrinsic motivation. If retail employees enjoy using e-learning modules, they should use e-learning modules, which is part of training for retail operations or corporate functions. Unlike extrinsic motivation, the e-learning module use (e.g. means) is enjoyable absent the presence of a desired outcome (e.g. end).

However, it appears that most retail employees do not inherently enjoy using e-learning modules, or any form of training/assessments modules (Skillsoft, 2007). Further, if retail employees do not perceive whether the e-learning assessment module impacts their ability to actually perform better on job performance metrics, then retail employees could be less enthusiastic about using e-learning assessment modules. Thus, we hypothesize:

H2. Intrinsic motivation negatively affects behavioural use of the e-learning assessment modules.

From behavioural intention to behavioural use

Behavioural intention represents the probability that people will engage in a specific behaviour (Sheppard *et al.*, 1988). Behavioural use is measured as the employees' actual use of e-learning assessment module (Levin and Hansen, 2008; Venkatesh *et al.*, 2003). Behavioural intention, or the probability of engaging in e-learning assessment module use, encompasses more than just motivation. Thus, we include it in the model.

The relationship between behavioural intention and behavioural use appears to diverge. Based on recent research, Weijters *et al.* (2007) rely on attitude as the sole predictor of self-service module use because consumers face a dichotomous choice when deciding to use the service. Morwitz *et al.* (2007) find mixed results across contexts. Chandon *et al.* (2005) conclude that people who are asked about their intentions are more likely to say they will perform an act than actually perform it. However, the module use literature consistently finds a positive link between behavioural intention and behavioural use (Davis *et al.*, 1992; Taylor and Todd, 1995; Venkatesh *et al.*, 2003). Based upon these results, we propose the same finding could occur when it comes to retailer e-learning assessment module use. Thus, we hypothesize:

- H3.* Behavioural intention positively affects behavioural use of the e-learning assessment modules.

Objective and subjective performance valuation

As stated earlier, retailers are not just interested in simply use for use sake. They are interested in performance, or the value, created using the e-learning assessment module. Clarke *et al.* (2001) and Marks (2000) note that the impact of module use (such as modules) must be measured with multiple outcomes. Our model includes two outcomes: objective value and subjective value.

Objective value is an evaluation of the employee's performance for the employee's supervisor or another external source provides. Ahearne *et al.* (2004) find a link between the frequency of respondents performing certain tasks and objective value. However, we note that retail employees with higher past performance evaluations might use e-learning assessment modules less than those with lower past performance evaluations because they feel they do not need it as much to perform effectively given prior performance and/or learning. Thus, we argue for the importance to control for prior performance in hypothesizing on the relationship between e-learning assessment module use and an objective outcome such as performance metrics. Stated formally, we propose:

- H4a.* Without considering past performance, there is a negative relationship between behavioural use and objective value.
- H4b.* Controlling for past performance, behavioural use positively affects objective value.

Subjective value represents the retail employees' perceived value gained through the e-learning assessment module use (Clarke *et al.*, 2001). We propose that the relationship between e-learning assessment module use and subjective value is similar to the relationship between use and objective value. Drawing on the logic presented previously for objective value, we predict:

- H5a.* Without considering past performance, there is a negative relationship between behavioural use and subjective value.
- H5b.* Controlling for past performance, behavioural use positively affects subjective value.

Location of e-learning assessment module use

Early e-learning assessment occurred on CBL modules that were used on personal computers kept in a retailer's employee break room or administrative office. Today, many of these assessments can be completed at home over the internet. While hourly wage employees probably prefer not to complete e-learning assessments "off the clock" (indeed, it may be illegal in some locations), salaried employees such as operations managers and corporate managers might find them of great use from a time management standpoint compared to having to go onsite and use a kiosk or office computer. This later scenario represents the focus of this study. According to a benchmark survey by Skillsoft (2007, p. 16), a major e-learning software provider, over one-third of 5,000 employees in the UK indicated, "they expect to be learning 'wherever I am via my laptop or computer.'" However, most laboratory research on retail module usage has investigated technologies occurring either exclusively onsite (i.e. inside the classroom) or offsite (i.e. outside the classroom). One decision retailers must decide is whether the modules are available solely onsite (e.g. in the retailer's training facilities, corporate HR training rooms, store employee lounges) or offsite (i.e. online at home).

It is possible that the location (i.e. onsite versus offsite) of the e-learning assessment module could moderate three proposed relationships of the e-learning module model because characteristics of the e-learning assessment module could alter participants' perceived value. One, the location of e-learning assessment module use could moderate the relationship between behavioural intention and behavioural use. Participants could be more likely to use the module if use occurs onsite since they are already present (e.g. convenience), or feel peer or group pressure. Two, location could moderate the relationship between behavioural use and objective learning outcome. If participants' performance evaluations include or are related to e-learning assessment module use, then the location of the e-learning assessment module use could intensify the relationship. Three, location of e-learning assessment module use could moderate the relationship between behavioural use and subjective learning outcome. Participants could perceive they learn more in certain locations (i.e. onsite versus offsite). Consistent with the conclusions of prior research (Chandon *et al.*, 2005; Deci and Ryan, 2000; Weijters *et al.*, 2007), we propose:

- H6a.* Location of module use moderates the relationship between behavioural intention and behavioural use.
- H6b.* Location of module use moderates the relationship between behavioural use and objective value.
- H6c.* Location of module use moderates the relationship between behavioural use and subjective value.

Control variables

Past performance evaluation. Ji and Wood (2007) examine the role of habit in use situations. Over time, the role of habit, or repetition, becomes a better predictor of use than intention. As mentioned in the "Objective and subjective performance valuation section," retail employees who perform better on performance evaluations could perceive they do not need to use e-learning assessment module as much compared to retail employees who perform worse on performance evaluations because of the better retail employees' experience. Thus, we investigate:

RQ1. What is the effect of past performance (higher versus lower) on *H1-H6*?

Country effect. Researchers have suggested that many motivation theories that rely on American samples have failed to provide useful explanations on other nationalities (Huddleston and Good, 1999). For example, consider the case of Mexico and the USA. Both countries share a physical border. Residents and ex-patriots move across the border for utilitarian (i.e. work) and hedonic (i.e. vacation) reasons. Many retailers operate in both geographies. However, the work culture appears to be substantially different between these two countries along several dimensions (Greer and Stephens, 1996; Hofstede, 2001; Kras, 1995; Trompenaars and Hampden-Turner, 1998; Schwartz, 1994). Thus, given our sample access (to be described shortly), we ask:

RQ2a. Do people from Mexico and the USA possess different levels of motivations, intention, use, etc. as to mentioned e-learning assessment topics?

RQ2b. To the extent there is a country effect (from *RQ1*), do the resulting different combinations lead to meaningfully different relationships (+/-/not significant) among motivations, use, outcomes, etc.?

Method

We found that retailers were hesitant to conduct an experiment with their e-learning assessment module programs because they want consistency and mandatory participation, as well as expressing privacy concerns over shared employee assessment data. Thus, we performed a semester-long experiment in an undergraduate marketing course that focused on retail practices including customer service management, specific technical capabilities (i.e. sales techniques, logistics, understanding of markets, purchasing, sales forecasting, pricing) that would mirror common retail employee training as much as possible. Following the suggestions of Peterson (2000), several similarities exist between employees and students in the context of e-learning assessment module that add credence to the exploratory study. For example, many students expressed a desire to find a retail management position after graduation. A majority of the students in the course either were currently working in the retail sector or had previous retail experience. Further, employees receive annual evaluations; students, likewise, receive semester evaluations (i.e. grades). Past performance could be merged from the university's register file, similar to merging past performance evaluations from a human resource manager's file. Use is captured by the module and merged into the database, similar to capturing use from the retailer's e-learning system. Motivations, intention to use, and subjective outcome scales would be similar to those used in a retail setting (i.e. store). Still, we note that additional research is needed to confirm the findings of a student-based exploratory study.

We chose a large, public university located in the Southwest as the setting so we could examine response patterns of American and Mexican participants because the university has a cross border exchange program. An announcement was made in the class regarding the survey's availability and a ten-bonus point incentive was provided for completing the surveys. A link to the survey was posted on the course web sites, and the survey was open for three days. For each study, 37 useable surveys were returned (30 North American, seven Mexican) out of the 51 enrolled students for a 74.5 per cent response rate.

The participants were questioned at the beginning of the semester on extrinsic motivation, intrinsic motivation, and intention to use the e-learning assessment module through a survey. They were questioned on subjective outcomes at the end of the semester through a different survey. Each survey had an electronic tag that tracked the e-mail address from each responder. E-mail addresses were merged with files containing student ID numbers to include objective outcome data, which was collected from the course grade book, and past performance, which was collected from the university register. E-learning assessment module use was documented through a system-generated report of students' participation in the e-learning assessment exercises. To examine e-learning assessment location, we designed the experiment to include both onsite e-learning assessment (i.e. response system clickers in class) and offsite e-learning assessment (i.e. online quizzes outside of class). Both assessment technologies required students to answer multiple-choice questions.

Survey questions related to extrinsic motivation, intrinsic motivation, and behavioural intention were adapted from Davis (1989) and Davis *et al.* (1992). Subjective value was adapted from Clarke *et al.* (2001). All questions, except for the behavioural use and objective value constructs were measured using a seven-point Likert scale (Appendix). Behavioural use was measured at the end of the semester as a frequency item for both the onsite e-learning assessment module use location study and the offsite e-learning assessment module use location study. For the onsite study, which relied on response system clickers, behavioural use was measured based on frequency that respondents participated in ungraded clicker-based e-learning assignments. On five separate occasions, the participants used the clickers as part of the day's lecture. On each occasion, participants took part in e-learning assessment by using the clicker response system to answer a set of multiple choice questions shown in Power Points displayed through the room projector. The multiple choice questions were used for assessment purposes ahead of the exams with some of the onsite e-learning assessment questions included in the exams.

For this study, a participant needed to respond to at least two questions to be counted as use of the onsite e-learning assessment module. Data were standardized to control for initial differences in the two different use scales. For the offsite e-learning assessment module use study, behavioural use was measured based on the total number of online quizzes completed by individual participants throughout the semester. Participants completed an online quiz outside of class for each chapter before the instructor reviewed the chapter in class. Participants who answered a majority of the five questions correctly received five points toward their final point total. Participants who failed to answer a majority of the five questions correctly received 0 points. Only those quizzes where the participant answered a majority of questions correctly were counted as use of the offsite assessment. For this study, a participant could complete a maximum of 20 quizzes.

Objective value was measured as a continuous variable that ranged from 0 to 1,000, which was the total number of points available to participants in the course. The points associated with the e-learning assessment module uses were subtracted from the overall point total for better transparency of their effect on other course related performance, following the recommendation of Levin and Hansen (2008).

The moderating variable was developed using the procedure described by Chin *et al.* (2003). The items measuring behavioural intention were multiplied by the categorical variable for each respondent. For this research project, offsite (e.g. at home) e-learning

assessment module entries were assigned a 1 and onsite (e.g. at the school or retail location) e-learning assessment module entries were assigned a 2. For the three items related to behavioural intention, each response was multiplied by 1 if it was from the offsite assessment study or by 2 if it was from the onsite assessment study. A similar procedure was followed to measure the moderating effect of location of module use between behavioural use and objective learning outcome and behavioural use and subjective learning outcome. A question from the beginning of the survey was repeated (but reverse coded) at the conclusion of the survey to test for haphazard responses. Comparison of the data shows that all respondents answered the two questions consistently.

Ordinary least squares regression was used to analyze the data. We examined the sample as a whole and then split the sample based on the respondents' grade point average before enrolment in the course (i.e. prior performance). Splitting the sample permits a better understanding of extrinsic motivation and intrinsic motivation. Research suggests that students with higher past grades may exhibit a higher degree of extrinsic motivation, intrinsic motivation, or both relative to students with lower past grades (Deci, 1975; Deci and Ryan, 2000). We split the sample at the median (3.2 of a possible 4.0 grade point average (GPA)) to provide similar statistical power across the subgroups. The breakpoint is also close enough to the B grade evaluation cut off such that a participant with a 3.2 GPA has earned more "A"s than "C"s on average, while a participant with a GPA lower than 3.2 represents a student who has earned more "C"s than "A"s on average.

Results

In summary, *H1*, *H2*, *H3*, *H4a*, *H4b*, *H5a*, *H6b*, and *H6c* are supported. *H5b* and *H6a* are not supported by the exploratory study. As shown in Table I, the correlation matrix is consistent with prior module use studies (Levin and Hansen, 2008).

Examining the regression models in Table II, the effect of intrinsic motivation on behavioural use is positive and significant, as in *H1*. As in *H2*, the impact of intrinsic motivation on behavioural use is negative and significant. These findings are consistent with prior research, which were conducted in different contexts, on participants' extrinsic motivation and intrinsic motivation (Davis *et al.*, 1992). As in *H3*, the effect of behavioural intention on behavioural use is positive and significant (Table II). We also tested an interaction between intrinsic and extrinsic motivations, as suggested by Davis *et al.* (1992). Because the interaction is not significant (i.e. does not

Variable	1	2	3	4	5
1. Behavioural use	1.00				
2. Behavioural intention	0.19	1.00			
3. Intrinsic motivation	-0.38***	0.41***	1.00		
4. Extrinsic motivation	0.09	0.72***	0.59***	1.00	
5. Country (Mexico)	0.002	0.06	-0.16	-0.06	1.00
6. Extrinsic-intrinsic Interaction	0.05	-0.09	-0.16	-0.22	-0.21

Notes: Significance at: * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$; correlation values are consistent with prior module use studies (Levin and Hansen, 2008). We also tested an interaction term (between intrinsic and extrinsic motivations), as suggested by Davis *et al.* (1992)

Table I.
Correlations

Variable	1. Full sample	2. Full sample	3. Lower past perform	4. Higher past perform	5. Full sample	6. Full sample §
Intercept	12.3***	12.2***	12.3***	12.2***	12.1***	
Behavioural intention	1.5*	2.0*	3.8**	- 0.4	2.2*	0.3
Intrinsic motivation	-4.2***	-4.2***	-5.1***	-3.9**	-4.3***	-0.7
Extrinsic motivation	2.0**	2.0***	1.9	2.1*	2.0**	0.3
Location (moderator)		-0.9	-2.7	0.9	-0.9	-0.1
Country (Mexican)					-1.7	-0.1
Adjusted R ²	0.30	0.30	0.38			
n	78	78	35	39		

Table II.
The effects of motivations and intention on e-learning assessment use

Notes: Significance at: * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$; “Model 6. Full sample §” refers to the standardized coefficient for the full sample in Model 5

add anything) in any of the regression models, we mention it here rather than in the table. Also, we limited the cultural examination to the full sample due to insufficient Mexican participant sample size to examine the past performance subgroups between the two countries.

Controlling for past performance, use of the e-learning assessment module has a positive effect on objective performance valuation. Thus, we find support for *H4b*. As indicated in regression Models 3 and 4 shown in Table III, people that performed better in the past are less likely to use e-learning assessment module as much. Thus, unless retailers take past performance into account, they could mistakenly assume that increased use of e-learning assessment module results in lower performance because of the missing past performance variable – *H4a* – which is also supported in the regression.

In the split sample regression models, the negative coefficient for behavioural use is much larger for the higher past performance group than the lower past performance group, supporting *H4a*. Interpreting, people that did better in the past on evaluations

Variable	1. Full sample	2. Lower past perform	3. Higher past perform	4. Full sample	5. Full sample
Intercept	620.9***	722.7***	566.7***	621.3***	666.5***
Behavioural use	-8.3***	-4.2*	-10.0***	-8.3***	9.4***
Location (moderator)	18.1***	8.5*	22.9***	18.0***	17.4***
Country effect				5.4	7.1
Past performance					-12.2
Adjusted R ²	0.26	0.04	0.39	0.25	0.26
n	76	35	39	76	76

Table III.
The effects of e-learning assessment use on objective value

Note: Significance at: * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$

used the assessment module less (perhaps because they feel they do not need it). We test this interpretation by including the actual cumulative prior GPA performance in Model 5 shown in Table III. The coefficient for use switches from negative to positive when past performance (which just missed the significance level) is added to the model at an interval scale in support of *H4b*.

In a similar vein, the coefficient for behavioural use as a predictor of subjective value changes from negative to positive when past performance is added in regression Model 5 shown in Table IV. While we find support for *H5a* (i.e. the negative coefficient in regression Models 1-4), the positive coefficient in Model 5 lacks statistical significance at the current sample size. Thus, we do not find support for *H5b*. We find support for *H5a* in three of the four regression models designed to test it. Similar to the objective performance valuation, the coefficient for behavioural use changes from negative to positive when prior, cumulative GPA is added in regression Model 5 as shown in Table IV. However, it lacks statistical significance at the current sample size.

As to the moderating role of the location of the e-learning assessment module, the data support two of the three hypotheses. We do not find support as shown in Table II for the logic that location of e-learning assessment module use moderates the relationship between behavioural intention and behavioural use, as hypothesized in *H6a*. In contrast, we do find that the location of the e-learning assessment module use moderates the relationship between behavioural use and objective valuation in *H6b* as shown in Table III and the relationship between behavioural use and subjective value *H6c* as shown in Table IV. Indeed, behavioural use does not predict objective value for these respondents without the location of e-learning assessment module use moderator based on additional regression tests not reported here for brevity. Thus, the relationship exists because of the moderating variable inclusion in the model. In short, location of module as a moderator matters.

Past performance

The contrast of results for the full sample compared to the past performance subgroups appears interesting. As to model antecedents, the analysis indicated no significant differences between the two groups. That is, both groups exhibit similar behavioural patterns with respect to predictors of e-learning assessment module use. However, the groups do differ in their perceived value generated from module use. Thus, while the two groups do not differ on how motivation leads to e-learning assessment module use,

Variable	1. Full sample	2. Lower past perform	3. Higher past perform	4. Full sample	5. Full sample
Intercept	-1.2	-0.6	-1.6*	-1.2	-1.5
Behavioural use	-0.1***	-0.1	-0.1**	-0.1***	0.05
Location (moderator)	0.2**	0.1	0.2**	0.2**	0.2**
Country				0.1	0.09
Past performance					0.08
Adjusted R^2	0.10	0.06	0.12	0.10	0.09
n	76	35	39	76	76

Note: Significance at: * $p < 0.10$, ** $p < 0.05$, and *** $p < 0.01$

Table IV.
The effects of e-learning assessment use on perceived subjective value

they do differ on how use leads to value. We believe this might be attributable to differences in beliefs about how much the e-learning assessment module could assist them.

Country effect

As to the two research questions on country effects, the data indicate significant differences exist in intrinsic motivation ($M_{\text{country}} = -0.42$, $F(1, 74) = 7.3$, $p < 0.01$), behavioural intention ($M_{\text{country}} = 0.14$, $F(1, 74) = 4.4$, $p = 0.04$), behavioural use ($M_{\text{country}} = 0.035$, $F(1, 74) = 4.3$, $p = 0.04$), and subjective value ($M_{\text{country}} = 0.17$, $F(1, 74) = 4.6$, $p = 0.04$) between participants from Mexico and the USA. However, these differences do not appear to change the relationships between the constructs in the model. That is, while mean scores on variables are different, the impact of the cultural control variable is not statistically significant in any of the regression models in Tables II, III, or IV. Given the small Mexican student sample size, we explored the summary statistics and found no indication of skewness or kurtosis. Still, while the results are significant, we note the sample size warrants replication to confirm the exploratory findings.

Implications, limitations, and conclusions

Many retailers have adopted e-learning systems to train employees and assess their knowledge. Some retailers may even use them to meet government mandates about verifying or assessing that employees know certain laws, etc. However, we find that most retailers do not really know what factors might impact the strategic value of the e-learning. For example, after we completed the analysis of the exploratory study, we posted a related inquiry on a popular retailer blog where many retail managers and retail executives share advice, etc. In the inquiry, we briefly mentioned the model and study, and we asked for any success stories regarding their respective firm's attempts to use strategically e-learning modules. Surprisingly to both the blog's administrator (i.e. a retail executive), and us there were zero comments. We ended the request for information after two weeks of encouragement by the administrator to participants to share stories, etc. on the topic. While it is possible that no one besides the administrator understood the question, it seems more likely that many retailers use e-learning assessment modules without knowledge about what factors might affect employee's use of e-learning tools.

This paper provides a conceptual starting point for retailers seeking to better utilize e-learning assessment. The proposed conceptual model links motivation, intention, use, location of use, prior performance, and subjective and objective value generated from use. The results of an exploratory experiment provide support for the majority of the hypotheses. A potential limitation of this research is the generalizability of the sample to all retailers. We caution that retailers should verify the linkages proposed in the theoretical model before acting on the suggestions in the next paragraphs.

The proposed model contributes to the retail literature in several manners. One, it answers the call for research into the role of extrinsic motivation and intrinsic motivation and participants' use of e-learning assessment modules. We find that both play important roles in use of retail e-learning assessment modules. Two, it answers the call for the incorporation of user-focused outcomes from users' use of e-learning

assessment modules. We find that prior experience levels of the participants affect use. We caution retailers to not mistakenly assume that increased use of e-learning assessment module results in lower performance. Rather, people that performed better in the past are less likely to use the modules. Three, it explores the moderating effect of location (onsite versus offsite) of e-learning assessment module use. We find that when individuals can take the assessments offsite (e.g. at home, on the road), there is a positive impact on both objective and subjective performance. Thus, retailers should consider taking assessment software stored on intranets and posting the assessment modules on the internet for employees to complete at an offsite location (i.e. home, on the road) – especially since this should normally decrease pressures on training budgets (as less personal, facilities, and resources are required when completed offsite versus onsite). Four, the importance of context in e-learning assessment module use is considered. This final area presents perhaps the most interesting conclusion to researchers.

Our results differ from Davis *et al.* (1992) finding on how extrinsic motivation and intrinsic motivations effects e-learning assessment module use. This result is not surprising, given several differences in context. The first difference is the module itself. Our study is focused on e-learning assessment modules. The second difference results from the sampling frame. Our exploratory study used a lab environment and experiment consisting of business students who had or were planning on retailing related careers. The third difference has to do with voluntariness. The participants in this study could have been more likely to follow instructions because of the lack of perceived autonomy. Because participants may hold different attitudes toward a particular module depending on whether the use is required, the role of voluntary versus mandatory use should be considered when retailers are considering different e-learning assessment technologies. Additionally, significant variance may be due to differences in how much participants cared about the topic (i.e. differences in apathetic motivation, defined here as the lack of enjoyment or interest for a particular task). Retailers might benefit from considering apathetic motivation in addition to extrinsic motivation and intrinsic motivation. Future research could compare passive e-learning assessment module such as an online quiz to active module such as a blog to determine if cognitive effort serves as a variable of interest. For example, research suggests that sales representatives report improved presentation skills and knowledge of customers because a module required their active rather than passive use (Ahearne *et al.*, 2007).

In conclusion, while CBLs and other forms of e-learning assessment modules have gained acceptance among retailers, we propose that the modules provide little in the way of value, unless prior experience, assessment location, and motivation levels are taken into account. Instructors and retail trainers stressing the usefulness of module could increase the levels of extrinsic motivation. This would likely increase use and, thereby, improve employee skills – without increasing costs, which is especially important when training budgets are under pressure. Likewise, instructors and trainers should stress the benefits of using e-learning assessment module with employees as well as with managers. Retail employees appear more likely to use an e-learning assessment module if they perceive a benefit or usefulness tied to the use of the e-learning assessment module. E-learning assessment module use appears to negatively affect both objective value and subjective value among participants with higher past performance;

participants see little worth in use of e-learning assessment module. By permitting use of the e-learning technologies outside of the store or corporate office, retailers might improve the connection between employee use and objective performance.

Note

1. For example, testing a retail associate's knowledge of cashiering might be broken down into five different modules on:
 - (1) scanning merchandise;
 - (2) processing payment;
 - (3) bagging;
 - (4) shrinkage/loss prevention; and
 - (5) returns.

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Further reading

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Appendix. Survey scale items

Extrinsic motivation (Davis, 1989; Davis *et al.*, 1992):

- Using the e-learning assessments will improve my performance in the course.
- Using the e-learning assessments in my marketing course will increase my productivity.
- Using the e-learning assessments will enhance my effectiveness in the course.
- I will find the e-learning assessments to be useful during the semester.

Intrinsic motivation (Davis, 1989; Davis *et al.*, 1992):

- I will find participating in the e-learning assessments to be enjoyable.
- The actual participating in the e-learning assessments will be pleasant.
- I will have fun participating in the e-learning assessments.
- I will enjoy participating in the e-learning assessments.

Behavioural intention (Davis, 1989; Davis *et al.*, 1992):

- I intend to use the e-learning assessments to improve my test scores in the course.
- I intend to use the e-learning assessments to improve my overall grade in the course.
- I intend to use the e-learning assessments to apply information from the course lectures.
- I intend to use the e-learning assessments to master the material from the course lectures.

Subjective value (Clarke *et al.*, 2001):

- How much did you learn using the e-learning assessments? [hellip];I didn't learn anything | I learned very much.
- How well do you think using the e-learning assessments will affect your ability to get a job? [..] Will definitely hurt me | Will definitely help me.
- How well do you think the e-learning assessments will affect your performance on a job? [..] Will definitely hurt my performance | Will definitely help my performance.

Notes: Extrinsic motivation, intrinsic motivation, and behavioural intention use used seven-point Likert scales (1 = strongly disagree, 7 = strongly agree). Subjective value used seven-point semantic differential scales. Location of use, behavioural use, past performance, and objective value constructs are objective in nature, as discussed in the measures sections.

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