Gender differences in technology acceptance in selected South African companies: Implications for electronic learning

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ABSTRACT

Orientation: Technology enhanced training is becoming popular as a means for the training of soft skills, especially in work-related environments. Men and women who use this type of training encounter some challenges with regard to their usage.

Research: The objective of this study was to investigate trainees' acceptance of electronic coursework as an instruction and learning technique in various industries in the South African context.

Motivation for the study: A persistent gender imbalance in the South African work-place has been noted to exist chiefly in the Science, Engineering and Technology (SET) sectors, areas that have an important bearing on South Africa's global competitiveness. This study explores how gender imbalance manifests in terms of trainee acceptance of electronic coursework.

Research design, approach and method: A cross-sectional survey design was used. A survey was conducted amongst 191 employees in the SET sector. The measuring instrument used was the Technology Acceptance Instrument (TAI) and included measures of Computer Self-Efficacy (CSE), Perceived Ease of Use (PEU), Perceived Usefulness (PU) and Behavioural Intention to Use (BI).

Main findings: Women ratings of the TAI to use the electronic coursework were slightly higher than men's ratings. Multiple regression analyses were also carried out to measure the variation in the level of influence with gender as a predictor variable. The results showed that compared to women, men had a lower salient effect of elements of the TAI, notably, CSE–PU; PU–BI and BI–PEU. However, compared to men, women had a higher salient effect in terms of the relationship between CSE–PU and PU–PEU.

Practical implications: The implication of the results is that interventions that focus on the human resources development of employees using electronic coursework (namely, CSE, PEU, PU and BI) are worth considering as they influence the acceptance of the interventions.

Contribution/value-add: The study contributes to existing knowledge about the conditions that precede employee acceptance of an electronic coursework intervention within the South African context. The study shows the important role dimensions of the Technology Acceptance Instrument (TAI).

INTRODUCTION

The focus of this study is on trainees' acceptance of electronic coursework as an instruction and learning technique in various industries in the South African context. The industries used in this study include the insurance, information technology and automotive industry. Liu and Wilson (2001) identify that, in an empirical study conducted in China, the prevalence of computer anxiety is higher amongst women than men due to women's exclusion from the work-place in the past. Computer anxiety was defined as an individuals' apprehension (or fear), when they are faced with the possibility of using computers (Simonson *et al.*, 1987, cited in Venkatesh, 2000). If this is so this may affect not only the usage but acceptance of technology by either men or women.

A persistent gender imbalance in the South African work-place has been noted to exist chiefly in the Science, Engineering and Technology (SET) sectors – areas that have an important bearing on South Africa's global competitiveness and, more specifically, in the country's quest for continued growth in sustaining the knowledge economy (Moletsane & Reddy, 2008). Women employed in the SET sectors face a myriad of challenges in their work-life in stark contrast to their male counterparts. Liu and Wilson (2001) identify four main obstacles that restrict women in these sectors, including:

- 1. gender stereotyping and societal attitudes
- 2. family responsibilities
- 3. working time constraints
- 4. a lack of confidence in completing tasks.

Moletsane and Reddy (2008) identify that women in these male-dominated sectors are perceived by their male equivalents as intruders and will not expect the same opportunities as their male counterparts; this is largely due to existing perceptions specifying that careers within the SET sectors are 'archetypically men's careers' (Evetts, 1998). As a result of the dearth of literature and studies on the subject (Moletsane & Reddy, 2008), an opportunity has been prompted for this study to ascertain the impact of gender on careers in the SET sector in South Africa.

Within the domain of work, the human resources (HR) function is responsible for the training and development of employees; a task not made easy in South Africa as the country faces a shortage of

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skills and a high rate of unemployment (Gerber, Nel & Van Dyk, 1999). Added to this are calls for building more cost-effective work-place learning environments in an attempt to meet individual and organisational objectives thereby making the education and training of employees mandatory (Govindasamy, 2002). In the organisational setting, the HR activity of training and development is responsible for building these costeffective work-place learning environments and ensuring that all employees get equal opportunity for their development. By development we refer to the uptake of skills by the individual through organisation led interventions.

Training using technology

Electronic learning (e-learning) has emerged as a popular means to train employees within the organisational setting largely due to its perceived advantages over the traditional mode of training. For the purpose of this article, e-learning will be defined as instructional content or a learning experience delivered or enabled by electronic technologies, including the Internet, intranets and extranets (Govindasamy, 2002; MacGregor & Whittingham, 2001). Numerous authors have highlighted the benefits of using e-learning with the most salient of these benefits being that it reduces barriers imposed by location, time, language and disability experienced by the trainee seeing that they can learn at their own convenience whilst ignoring these barriers (Cross, 1998); the benefits of e-learning create a unique learning experience because the technology supports the delivery and makes use of multimedia elements, such as sound, video and interactive hypermedia (McNeil, Robin & Miller, 2000). The usage of these multimedia elements will assist in delivering richer content to the learner (Marold, 2002). Coupled with this, Payne, Stephenson, Morns, Tempest, Mileham and Griffin (2009), using a pre and post test, investigated whether e-learning can be successfully used to train employees. Their results found that e-learning improved the skills of inexperienced trainees significantly. The other major implication here is that e-learning can be applied outside of the traditional learning environment to train unskilled employees to undertake complex practical tasks. It is worthwhile exploring the use of e-learning as a tool to train in the South African context.

Barriers towards technology-acceptance

In South Africa e-learning is fast becoming a preferred tool to train soft skills (Deller, 2001); however, surmountable challenges exist and have been widely documented in literature as sources that affect technology acceptance amongst employees in organisations and in society. One stream of literature attributes the problem to be the underutilisation of technology systems within organisations (Johansen & Swigart, 1996; Moore & Benbasat, 1991; Norman, 1993; Weiner, 1993). Even though advances in hardware and software capabilities exist, system utilisation still remains a priority. Another stream of literature identifies that the initial decision to adopt a particular technology is made at the organisational level, whilst the decision to use a particular technology is left to the individual (Morgan & Scott-Links, 2001) and this may create problems for employees accepting technology. The main users of the technology are the employees though the decision to incorporate the technology is made by the employer. Sufficient buy in is necessary from these stakeholders; especially, the employees.

In other cases, Parthasarathy and Sohi (1997) identify that although a percentage of the organisation will welcome the new technology, another percentage will resist it. It has been noted that a lack of acceptance will lead to underutilisation of the new technology's capabilities (Robinson, Marshall & Stamps, 2005).

An additional stream of literature has attributed the problem of technology acceptance to external factors outside the control of the individual and societal norms (Robinson *et al.*, 2005). These external factors include support services with specific reference to tutorials, training sessions and help given to trainees. This is true in the South African context which has left the country reeling from the apartheid legacy which enforced an idea of separateness. Computer anxiety was defined as individuals' apprehension (or fear) when they are faced with the possibility of using computers (Simonson et al., 1987, cited in Venkatesh, 2000). Apartheid policies have been attributed to the present imbalances regarding the acquisition of skills and opportunities in present day society (Wilson, 2001), principally for Black people and specifically for Black women (The South African Government Gazette, 1997). The aim of this study is to investigate technology acceptance (in this case, the use of e-learning as a training tool) amongst a group of employees in the South African work-place, noted for its changing demographics post-apartheid.

This study has been motivated by the government's call for research to be conducted on the social responses and challenges in terms of technological innovation within South African society (Government Communications, 1996). A need exists to investigate the impact of gender on SET sectors, despite the perceived dearth of literature on these sectors (Moletsane & Reddy, 2008). This study uniquely tries to explore gender differences towards technology acceptance thus seeking to address the gender gap in technology acceptance in various cultural contexts outside Taiwan where a similar study was conducted (Ong & Lai, 2006). The rest of this paper will explore the theoretical framework upon which this research hinges (i.e. the Technology Acceptance Model, or TAM), set working hypotheses, give methodological justifications and, finally, this study will report on the findings.

Theoretical Development

The core concept of the TAM is that a person's attitude towards using technology is jointly determined by perceived usefulness (PU) and perceived ease of use (PEU). Technology usage is determined by behavioural intention (BI) to use technology but is different from the theory of reasoned action in that usage of technology is viewed as being mediated by the person's attitudes towards using the technology (Robinson *et al.*, 2005).

The attitude-behavioural intentions relationship as espoused in the TAM assumes that all uses being equal intentions to use technology again can be formed based upon positive usage of the technology. The PU–BI relationship assumes this and has been shown to have a positive or negative influence on individual behaviour in organisations (Robinson *et al.*, 2005). The research therefore seeks to measure perceptions and relationships amongst these dominants of the TAM with gender as a moderating variable.

Computer self-efficacy

In Bandura's (1977) social cognitive theory, mention is made of the term self-efficacy expectation and is defined as the conviction that one can successfully execute the behaviour required to produce the outcome. In an information systems context, computer self-efficacy is defined as 'an individual's perceptions of his or her ability to use computers in the accomplishment of a task rather than reflecting simple component skills' (Compeau & Higgins, 1995). Research has indicated that women typically demonstrate higher levels of computer anxiety (Durndell & Hagg, 2002; Okebukola, 1993; Whitley, 1997) and lower levels of self-efficacy and/or computer self-efficacy (CSE) in terms of using computer technology and the Internet (Comber, Colley, Hargreaves & Dorn, 1997; Durndell, Hagg & Laithwaite, 2000; Durndell & Hagg, 2002; Ong & Lai, 2006).

In terms of the relationship between computer self-efficacy and perceived usefulness, it is noted that perceived usefulness reflects a person's beliefs or expectations about an outcome (Ong & Lai, 2006) which seems to suggest that computer self-efficacy



may be an important factor affecting perceived usefulness (Chau, 2001). The relationship arguments postulated by prior researchers (Davis, 1989; Mathieson, 1991) have been empirically examined and show that there is a causal link between computer self-efficacy and perceived ease of use (Agarwal, Sambamurthy & Stair, 2000; Chau, 2001; Hong, Thong, Wong & Tam, 2001; Ong & Lai, 2006; Venkatesh & Davis, 1996). These indications also show that computer self-efficacy has a significant positive effect on perceived ease of use for the e-learning system. Furthermore, researchers have also suggested the existence of gender based differences in decision making behaviour (Claes, 1999; Feingold, 1994). There is evidence to support the view that women show a relatively high tendency towards exhibiting emotion when compared to men (Fisk & Stevens, 1993). Similarly, Venkatesh and Morris (2000) propose that women are more motivated by process (PEU) and social (subjective norm) factors than men. The researcher therefore expects that a low evaluation of computer self-efficacy will cause an increase in the salience of perceptions of usefulness and ease of use in an e-learning context.

Perceived usefulness

Perceived usefulness is defined as the degree to which a person believes that using a particular technology would enhance their job performance (Davis, 1989). Prior research has shown that male college students rated computers as more useful than female students (Koohang, 1989; Shashaani & Khalili, 2001). Ong and Lai (2006), amongst others, imply that an e-learning system with a higher level of perceived usefulness is one in which a user believes that there is a positive user-performance relationship and has been shown to influence people's behavioural intention to use the e-learning system (Davis, 1989; Ong & Lai, 2006; Venkatesh, 1999; Venkatesh, 2000; Venkatesh & Davis, 1996; Venkatesh & Davis, 2000; Venkatesh & Morris, 2000). Additionally, Venkatesh and Morris (2000) indicate that men consider perceived usefulness to a greater extent than women in making their decisions considering usefulness or productivity-related factors of a new technology and that men are more driven by instrumental factors than women.

Perceived ease of use

Perceived ease of use is defined as the degree to which a person believes that using the system would be free of effort (Davis, 1989). Previous research has shown that men's ratings of selfefficacy and/or computer self-efficacy is higher than that of women (Comber *et al.*, 1997; Durndell *et al.*, 2000; Durndell & Hagg, 2002; Ong & Lai, 2006; Whitley, 1997). Moon and Kim (2001) point out that information technology systems that are easier to use will be less threatening to the individual. Ong and Lai (2006) have tested Moon and Kim's assertion and found that men's rating of PEU was higher in terms of e-learning. Furthermore, PEU is expected to influence PU and BI, either directly or indirectly, through its effect on PU (Agarwal & Prasad, 1999; Davis, Bagozzi & Warshaw, 1989; Hu, Chau, Sheng & Tam, 1999; Venkatesh, 1999, 2000; Venkatesh & Davis, 1996).

Behavioural intention to use

Ong and Lai (2006) identify some difficulties in interpreting the multidimensional aspects of use as mandatory versus voluntary, informed versus uninformed, effective versus ineffective, amongst others. Delone and McLean (2003) suggest that BI may be a worthwhile alternative. BI is an attitude, whereas use indicates behavior (Ong & Lai, 2006). A significant body of research has found that men are more experienced in terms of working with computers and exhibit more positive attitudes than females (Durndell & Thomson, 1997; Ong & Lai, 2006; Whitley, 1997). Furthermore, Reda and Dennis (1992) investigated gender-based attitudes towards using computerassisted learning (CAL) amongst university students; results revealed that male students preferred using CAL in contrast to female students.

Based on the preceding literature review, the following hypotheses are formulated:

Hypothesis 1: Men rate CSE higher than women do.

Hypothesis 2: CSE influences PU of e-learning more strongly for women than for men.

Hypothesis 3: CSE influences PEU of e-learning more strongly for women than for men.

Hypothesis 4: Men rate PU of e-learning higher than women do.

Hypothesis 5: PU influences BI to use e-learning more strongly for men than for women.

Hypothesis 6: Men rate PEU of e-learning higher than women do.

Hypothesis 7: PEU influences perceived usefulness of e-learning more strongly for women than for men.

Hypothesis 8: PEU influences BI to use e-learning more strongly for women than for men.

Hypothesis 9: Men rate behavioural intention to use e-learning higher than women do.

These hypothesised relationships are described graphically in Figure 1.

RESEARCH DESIGN

Research Approach

A cross-sectional survey design was used in this study because it provided a 'snap shot' of the frequency and characteristics under study (technology acceptance between males and females) and allowed us to study people at a particular point in time.

A questionnaire incorporating elements of the TAM (Ong & Lai, 2006) was used to gather data in a non-random field survey. A questionnaire was deemed an appropriate method because, firstly, this technique allowed for exploring the relationships within the sample. Secondly, questionnaires were a cheap and cost effective method allowing for a wider reach (Jack & Clarke, 1998). Thirdly, responses were gathered in a standardised manner with already existing measures of the TAM available. Finally, to the best of our knowledge, no other study existed within the African context and thus we sought to test the applicability of the measure in this context using the existing measures.

Research Method

Research respondents

The respondents were employees from four large companies in South Africa, namely a motor vehicle manufacturer and retailing company, two leading information technology companies and a life assurance company. Each company has implemented e-learning as a training tool for more than 5 years, research respondents must have been using e-learning for over a year. The respondents answered a 14-item self-administered questionnaire. The questionnaire was made available online and for each question respondents were asked to select the response which best described their level of agreement with the statement. Of the 205 surveys received, a total of 191 were deemed usable for the purpose of the research thereby achieving a 93% rate in terms of usability of the measures. Table 1 shows that the sample consisted of 103 male and 88 female respondents. Participation was voluntary and confidentiality was maintained. Respondents could withdraw at any point during the research process. Employees from all departments, job groups and educational levels were included.

Measuring Instruments

In an attempt to ensure content validity of the scales, it was intended that the items represent the concept of which generalisations are to be made. The researcher selected items which were either mainly adapted from previous studies or from the previous application of the TAM (Compeau & Higgins, 1995; Davis, 1989; Ong & Lai, 2006; Venkatesh & Davis, 1996). Validated items adapted from prior studies were used to measure CSE, PEU, PU and BI. In terms of the reliability of the measure, the authors found that the measure had been used before by Ong and Lai (2006). The reliability of the measure in their study showed sufficient reliability as they were above the required threshold of 0.80 recommended by Nunnally (1978). The coefficients of the measure in their study were as follows:

- computer self-efficacy (0.91)
- perceived usefulness (0.92)
- perceived ease of use (0.89)
- behavioural intention to use (0.87).

TABLE 1 Characteristics of the respondents					
Item	Category	Frequency	%		
Gender	Male	103	54		
	Female	88	46		
Language	English	107	56		
	Afrikaans	59	31		
	Xhosa	10	5		
	Zulu	5	3		
	Other*	10	5		
Industry	Automotive	129	68		
	Insurance	41	21		
	Information Technology (I.T)	21	11		
N = 191					

*Respondents did not specify which cultural group they belonged to in this category.

Our test for reliability using our sample data also showed sufficient reliability of the measure and ranged from 0.80 to 0.92, with ratings of CSE and PEU yielding 0.80 whereas PU yielded 0.93 and finally, BI yielded 0.92.

The participants indicated their agreement or disagreement with the survey instrument using a 5-point Likert-type scale. Pre-testing and pilot testing of measures were conducted using a sample of Industrial Psychology students using e-learning in their courses at the Nelson Mandela Metropolitan University (NMMU). Academics from the human resources and computer science field from NMMU were also consulted to give their input on the measure; the items were modified to make them relevant to the e-learning usage context based upon the feedback.

Research procedure

The human resources manager of each of the four participating organisations was solicited for their cooperation to participate in the study. The authors wrote a formal letter and followed up with a phone call explaining the motive for the study and what was expected from participants. The questionnaire was delivered electronically via a website set up by the researcher; alternatively, employees who could not access the Internet due to network or bandwidth problems were able to contact the human resources manager to obtain a manual copy of the questionnaire. The human resource managers would send an email to all the employees who had been using e-learning for a year or more within their organisation using a template of instructions provided by the researcher. The instructions to the respondents explained the purpose of the research and assured each respondent's anonymity. Participation in the research was voluntary and this was communicated to the trainees through the office of the human resources manager; respondents could withdraw at any time.

Statistical Analyses

The statistical analyses were carried out with the SPSS statistics programme (SPSS, 2003). Cronbach alpha coefficients (α) were used to assess the internal consistency of the measuring instruments (Clark & Watson, 1995). Pearson product-moment correlation coefficients were used to assess the relationships between variables. Descriptive statistics (e.g. means and standard deviations) were used to analyse the data. Multiple regression analyses were used to investigate whether gender predicts ratings of the TAM model. In terms of significance, it was decided to set the values at a 95% confidence interval level (p < 0.05). Effect sizes (Steyn, 1999) were used to decide on the practical significance of the findings. A cut-off point of 0.30 (medium effect, Cohen, 1988) was set for the practical significance of correlation coefficients.

The correlation matrix approach and factor analysis were both applied to examine the convergent and discriminant validity (Doll & Torkzadeh, 1988; Hu *et al.*, 1999). As summarised in Table 2, the result of correlation analysis shows that the smallest within-factor correlations are:

TABLE 2 Product-moment correlations														
Scale		CSE				PU			PEU			BI		
	1	2	3	4	1	2	3	4	1	2	3	4	1	2
CSE 1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CSE 2	0.35*+	-	-	-	-	-	-	-	-	-	-	-	-	-
CSE 3	0.56*++	0.52*++	-	-	-	-	-	-	-	-	-	-	-	-
CSE 4	0.24*	0.52*++	0.42*+	-	-	-	-	-	-	-	-	-	-	-
PU 1	0.22*	0.18*	0.20*	0.25*	-	-	-	-	-	-	-	-	-	-
PU 2	0.22*	0.20*	0.20*	0.25*	0.90*++	-	-	-	-	-	-	-	-	-
PU 3	0.16*	0.19*	0.20*	0.23*	0.80*++	0.30*+	-	-	-	-	-	-	-	-
PU 4	0.20*	0.22*	0.20*	0.24*	0.80*++	0.22*	0.36*+	-	-	-	-	-	-	-
PEU 1	0.30*+	0.34*+	0.23*	0.24*	0.44*+	0.90*++	0.39*+	0.36*+	-	-	-	-	-	-
PEU 2	0.25*	0.30*+	0.30*	0.40*+	0.22*	0.42*+	0.15*	0.23*	0.36*+	-	-	-	-	-
PEU 3	0.45*+	0.30*+	0.34*+	0.20*	0.28*	0.79*++	0.20*	0.20*	0.57*++	0.60*++	-	-	-	-
PEU 4	0.33*+	0.33*+	0.35*+	0.23*	0.24*	0.82*+ +	0.23*	0.20*	0.45*+	0.50*++	0.49*+	-	-	-
BI1	0.25*	0.22*	0.25*	0.30*+	0.60*+ +	0.53*+ +	0.53*++	0.55*++	0.50*++	0.34*+	0.43*+	0.32*+	-	-
BI2	0.25*	0.23*	0.23*	0.24*	0.50*+ +	0.50*+ +	0.50*++	0.50*++	0.44*+	0.41*+	0.38*+	0.33*+	0.90*+	-

CSE, Computer self-efficacy; PU, Perceived usefulness; PEU, Perceived ease of use; BI, Behavioural intention to use

*p < 0.05; + r > 0.30; ++ r > 0.50

• computer self-efficacy = 0.52

- perceived usefulness = 0.82
- perceived ease of use = 0.50
- behavioural intention to use = 0.90.

Meanwhile, each smallest within-factor correlation was considerably higher amongst items intended for the same construct than among those designed to measure different constructs. This suggests adequate convergent and discriminant validity of the measurement.

RESULTS

Model estimation and hypotheses testing

The effects of gender upon CSE, PU, PEU and BI were examined using mean scores and standard deviations (see Table 3). Significant gender differences were found for CSE, PU, PEU and BI. These differences indicate that women rated computer self-efficacy, perceived usefulness, perceived ease of use and behavioural intention to use e-learning slightly higher than men. As a result, Hypothesis 1, Hypothesis 4, Hypothesis 6 and Hypothesis 9 are not supported.

Multiple regression analyses

Multiple regression analyses were carried out to measure the variation in the level of influence the predictor variable gender has on the dominants of e-learning acceptance namely computer self-efficacy (CSE), perceived usefulness (PU), perceived ease of use (PEU) and behavioural intention to use (BI).

Table 4 reports on the extent of differences between men and women with regard to elements of the TAM. The results show that compared to women, men had a lower salient effect on CSE in determining PU, hence Hypothesis 2 was rejected. Additionally, Hypothesis 5 is not supported as women were found to have a higher salient effect with regards to PU-BI. This was also true in terms of Hypothesis 8 which showed that women had a lower salient effect on BI in determining

TABLE 3								
Descriptive statistics and testing results								
Women (n = 88)	Men (n = 103)	Significance of difference between	n					

					women and men (F ratios)
	Mean	s.d.	Mean	s.d.	
CSE	8.40	2.84	7.95	2.87	0.284*
PU	8.99	3.29	8.32	3.11	0.151*
PEU	7.83	2.53	7.62	2.41	0.561*
BI	3.80	1.55	3.57	1.51	0.317*
o d oto	indard Devi	ation			

* Correlations are significant at p < 0.05.

PU, hence Hypothesis 8 was rejected. However, women had a higher salient effect regarding the relationships between CSE-PEU and PU-PEU; Hypotheses 3 and 7 were therefore supported. Table 5 summarises the findings of the study based upon the testing of the hypotheses.

DISCUSSION

The purpose of this research was to explore technology acceptance along gender lines in selected South African companies. Gender was selected as a moderating variable largely due to the noted fact that the South African work-place is becoming progressively diverse (Trollip, 1993). The findings showed that women rated CSE, PEU, PU and BI higher than men did. In other words, regarding to the sample used in the study, women were more likely to favour and accept the use of technology based training (especially e-learning) than their male counterparts. This greatly surprised the researchers because a plethora of literature (as highlighted in this article) exists contradicting these findings. Although women rated the TAM elements higher than men did, the only significant effect with regard to the relationships between the elements were shown in terms of computer self-efficacy and perceived ease of use (Hypothesis 3 was supported) and perceived ease of use and perceived usefulness (Hypothesis 7 was supported). The implication here is that these issues were considered important by women participating in this study.

Table 4 Testing of relationships						
	Entire Sample	Men (<i>n</i> = 103)	Women (n = 88)	Result of differences		
Relationship	β	R^2	R^2	_		
CSE – PU (Hypothesis 2)	0.41***	0.51	0.41	Not Supported		
CSE – PEU (Hypothesis 3)	0.30***	0.21	0.39	Supported		
PU – BI (Hypothesis 5)	0.51***	0.47	0.55	Not Supported		
PU – PEU (Hypothesis 7)	0.32***	0.28	0.36	Supported		
BI – PEU (Hypothesis 8)	0.57***	0.64	0.51	Not Supported		

*** *p* < 0.001

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		Hypothesis	Result
Perceptions			
H1	CSE	Men < Women	Rejected
H4	PU	Men < Women	Rejected
H6	PEU	Men < Women	Rejected
H9	BI	Men < Women	Rejected
Relationships			
H2	CSE-PU	Women > Men	Not Supported
H3	CSE-PEU	Women > Men	Supported
H5	PU–BI	Men > Women	Not Supported
H7	PEU-PU	Women > Men	Supported
H8	PEU–BI	Women > Men	Not Supported

Conclusions and future research

The role of e-learning in South African corporations emerges as a rewarding avenue for research enquiry into the field of Human Resource Management; however, the role of e-learning has not been fully explored. The study contributes to the extant literature on technology acceptance mainly in organisations moving away from the traditional path of higher education and from the school setting. The study also contributes by giving insights into an area that has been perceived as an area lacking in research on gender and how it manifests in the SET sectors. E-learning can be perceived differently by women and men, future research can aim to understand these differences in perceptions and relationships of the TAM. Having established that relationships exist between elements of the TAM, future research could incorporate a qualitative angle exploring further the constructs of the TAM. Another interesting aspect to explore further and which was a weakness of this study is to explore how the age factor coupled with gender relates to e-learning acceptance.

Recommendations

Apart from advancing theory, the HR function can benefit from the findings from this study. Managers are advised to consider the factors that influence the design of training interventions using e-learning and factors that influence the acceptance of it. This article has shown the importance of technology acceptance factors. By acknowledging these factors the HR function can mentor and help those that are struggling with using technology based training in organisations. Finally, the HR function can benefit from the findings of this study as the results place impetus on the role of understanding the needs of the individual trainee. The results of this study emphasise the importance of having an understanding of these needs and how they may have implications for employee development initiatives. It is imperative to keep in mind the basic training principles (Cline & Sieebert, 1993; Constanzo, 1996) regardless of the training mode used. Taking into consideration technology acceptance factors may help with regards making technology acceptance better in organisations; to this end it may meet the training needs of the organisation (Caffarella, 1994; Erasmus & van Dy \bar{k} , 2003). Such efforts may in turn affect how trainees use and relate to the e-learning system as studies have shown that perceived usefulness of using a particular technology would enhance job performance (Davis, 1989).

It has been shown that perceived usefulness is affected by perceived ease of use in terms of the e-learning system. It is envisioned that the process of a training needs analysis is mandatory to avoid underutilising systems in organisations (Johansen & Swigart, 1996; Moore & Benbasat, 1991; Norman, 1993; Weiner, 1993). This process will also help in identifying key issues of systems usage. Furthermore, organisations need to be cognisant of the training programme's tasks by conducting a task analysis. This ensures that trainees know exactly what is to be learnt and its relevancy to the specific job outcomes. Davis (1989) showed that using a particular technology is influenced by the potential gain of usage and the relevance to a job outcome.

Limitations

In terms of the study's limitations, the results of the study cannot be generalised to include other sectors, but could be used as a guideline for the HR function applicable to e-learning usage in organisations. A further limitation of this study is the omission of soliciting the age responses of the respondents. It would have been interesting to compare the age responses when using the predictor variable of gender in relation to the TAM.

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