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Why Employees Do Non-Work-Related Computing: An Investigation of Factors Affecting NWRC in a Workplace

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Abstract

Non-work-related computing (NWRC) refers to any voluntary act of employees using their companies' Internet access during office hours for non-work purposes. This study attempts to investigate the causes of NWRC. The model was developed based on rational decision-making and tested through a survey of 167 employees in China and Singapore. Results reveal that NWRC intention is a significant predictor of NWRC behaviour, and NWRC attitude and subjective norms are significant predictors of behavioural intention as in many prior studies. Besides, the perceived benefits and costs affect NWRC attitude. However, it turns out that habit may overrule other rational decisional factors when habit is included in the model. Finally, the comparison between two groups with different levels of control mechanisms shows the moderating effect.

Keywords: Non-work Related Computing (NWRC), Theory of Planned Behaviour, Habit, Control Mechanism

1. Introduction

Computers and the Internet have become an integrated part of organizations today. The use of the Internet in organizations improves communication and employees' efficiency (Sharma & Jatinder 2004). However, it also results in the behaviour called non-work-related computing (NWRC) which is defined as any voluntary act of employees using their companies' Internet access during office hours for non-work purposes (Lim, Teo & Loo2002). According to the survey of 1,244 respondents by vault.com (1999), almost 90% employees surf the Internet for non-work related purposes during office hours.

NWRC can lead to huge losses of a company. Much of the cost arises from losses of employee productivity (Lim et al, 2002; Verespej, 2000; Simmers, 2002; Sipior & Ward, 1999; Friedman, 2000). Indeed, studies have shown that wasting time online accounts for 30-40% of productivity losses (Wynn & Trudeau, 2001). Besides productivity losses, other possible losses include losses of intellectual property, sexual harassment lawsuits, security threats and network bandwidth overload (Lim, 2002; Simmers, 2002).

To prevent or reduce various kinds of losses, organizations implemented different kinds of control mechanisms such as blocking access to certain websites or Internet usage policy (Urbaczewski & Jessup, 2002). Such mechanisms, however, failed to significantly reduce the NWRC intention and behaviours (Backhouse & Dhillon, 1995). NWRC still persists in workplace (Meyer, 1995; Straub & Welke, 1998). Accordingly, one of

questions could be raised on ineffective control mechanisms is whether the previous research on the causes of NWRC adequately addressed the current phenomenon (Lee& Lee, 2002; Parker, 1998).

Motivated by the practical significance of understanding the causes of NWRC and to suggest proper control towards it, this study investigates the following research questions:

- ***What are the major factors affecting an employee's NWRC behaviours?***
- ***How do control mechanisms affect these factors?***

The study contributes to the NWRC literature by understanding how different factors would affect NWRC so that organizations can design more appropriate management strategies to avoid losses from NWRC behaviours in the future.

2. Literature Review

Numerous terminologies describing NWRC emphasize on use of organizational resources for personal purposes with different focuses have been proposed by various researchers such as junk computing (Guthrie &Gray,1996), Internet abuse (Anandarajan,M ,2002), cyberloafing(Lim , 2002) and cyberslacking (Levoie & Pychyl ,2001). In our study, we adapt the definition by Lim (2002) on NWRC- any voluntary act of employees using their companies' Internet access during office hours for non-work purposes. We also including Internet access activities such as personal ecommerce, personal communication, Internet browsing, downloading files for personal purposes and Internet gaming based on Siau, Nah & Teng (2002) and Guthrie & Gary (1996)'s classifications.

Guthrie & Gary (1996) investigated the causes of junk computing and stated that it could be caused by physical environment conditions as well as individual behavioural styles. To empirically examine the reasons why employees commit NWRC, Lee, Lim& Wong (2005) used the theory of planned behaviour (TPB) as the backbone of the study. Results showed that an individual's perceived usefulness, normative awareness, influences of peer acquiesces, and perceived IS accessibility are all significant factors affecting NWRC. Besides, they found that an employee's habitual NWRC will lead to further NWRC behaviours unconsciously. Another approach using the neutralization techniques from the organizational behaviour perspective suggests that, when individuals perceive their organizations to be unjust, they are likely to legitimize their engagement in the act of cyber loafing (Lim 2002).

Thus, to clarify the causes of NWRC and to suggest proper control to keep it within a reasonable range will bring credible contributions towards this research area.

3. Theoretical Background

In order to identify factors affecting NWRC in more organized manner, we adopt the theory of reasoned action (TRA) (Ajzen &Fishbein, 1980) which has been widely applied to predicting and understanding human behaviour based on the assumption that human beings are rational and make systematic use of information available to them. According to the TRA, a person's performance of a specified behaviour is determined by his behavioural intention to perform the behaviour. Next, the intention is jointly

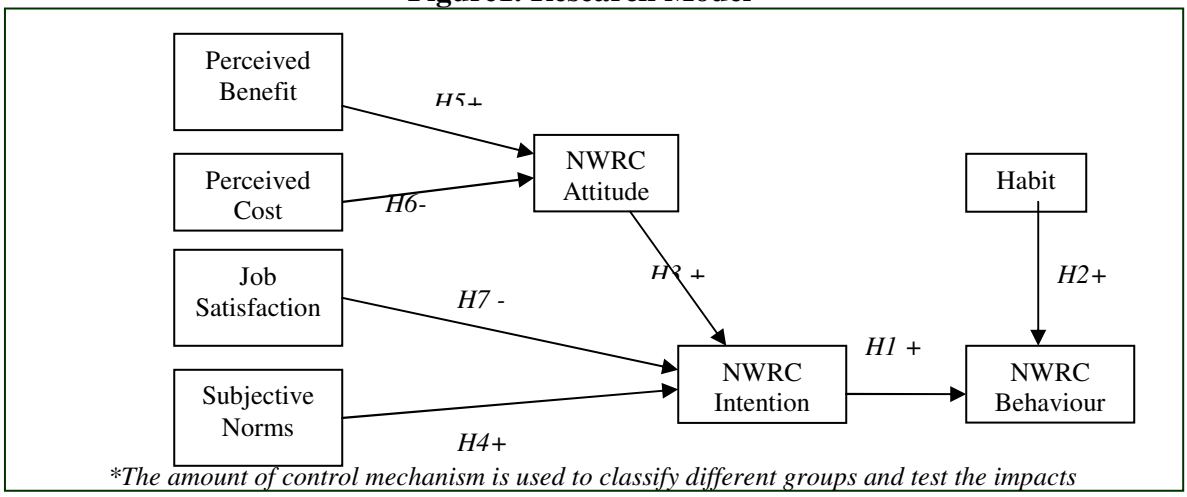
determined by the person's attitude and subjective norm concerning the behaviour in question with relative weights. Furthermore, attitudes are made up of the beliefs that a person accumulates over his lifetime (Davis, 1989).

In identifying salient beliefs, the cost-benefit paradigm provides useful framework. It assumes that individuals make rational decisions based on maximizing their benefits and minimizing the cost (Beccaria, 1963). It explains people's choices among various decision making strategies in terms of cognitive tradeoffs between the effort required to employ the strategy and the result from the decision. Furthermore, we consider the habitual nature of behaviour based on the theory of interpersonal behaviour (TIB) (Triandis, 1979) in addition to intention because TIB posits that the habitual nature of behaviour will have an influence on the individual's response to a given situation.

4. Research Model and Hypothesis

Based on prior literature and theories, the research model and related hypotheses are proposed in Figure 1.

Figure1. Research Model



4.1 NWRC Intention

The NWRC intention is the willingness to do NWRC based on the outcome of personal decision making process (Lee et al. 2005). In this study, NWRC behaviour refers to employees' actual usage of the Internet provided by the organization for non-work-related purpose. As the relationship between intention and behaviour is supported by TRA and numerous prior studies (e.g. Ajzen, 1991; Al-Jabri & Abdul-Gader, 1997; Triandis, 1979), we assume that:

H1: Intention towards NWRC will positively affect employees' NWRC behaviours.

4.2 Habit

Habit refers to situation-behaviour sequences that are or have become automatic and occur without self instruction (Triandis, 1979). Similar to intention, prior research identifies habit as a good predictor of future behaviours (e.g. Conner & Armitage, 1998; Orbell, Hodgkins & Sheeran, 1997; Ouelette & Wood, 1998). In addition, Lee et al.

(2005)'s research found that employee's NWRC habit is a significant predictor of NWRC behaviours. Thus, we hypothesize:

H2: Personal habit of NWRC will positively affect employees' NWRC behaviours.

4.3 Attitude and Subjective Norms

In TRA, behavioural intention is jointly determined by the person's attitude and subjective norm concerning the behaviours in question. Galletta & Polak (2003)'s study showed supportive peer and supervisor culture promotes the Internet abuse in organizations. Lee et al. (2005) also found employee's NWRC behaviours are significantly affected by whether his/her important referents have favourable evaluation towards it. Being consistent with the previous empirical findings and TRA, we proposed:

H3: The attitude towards NWRC will positively affect the NWRC intention.

H4: Subjective norms regarding NWRC will positively affect employees' NWRC intention.

4.4 The Perceived Benefit and Perceived cost

According to the cost-benefit paradigm, three perceived costs and three perceived benefits, respectively, are identified as the important predictor of attitude toward NWRC (Ajzen & Fishbein 1980; Triandis 1979).:

- Time saving: NWRC can eliminate travelling time such as going to bank. It was referred as part of the perceived usefulness by past research (Lee et al. 2005).
- Fun and enjoyment: It was refereed as perceived enjoyment (Teo, Lim & Lai, 1999) and computer playfulness (Armstrong, Phillips &Saling, 2000) previously.
- Learning: As mentioned by Belanger & Slyke (2002), a certain amount of playful use of computer applications leads to learning that may be valuable.
- Team building and facilitating communication: The social aspects of computing, unrelated to organizational goals contribute to team building and facilitate communication. (Guthrie et al 1996).

The study done by Skinner & Fream (1997) on computer abuse among colleague students suggested that most of the students perceived punishment as one of the most obvious costs for computer abuse. Thus, the following possible costs for employees are proposed in relation to our NWRC context:

- Fine: in case of being caught by electronic monitoring system.
- Loss of status in organization: i.e. less promotion chances
- Dismissal

H5: The perceived benefit of NWRC will positively affect employees' NWRC attitude.

H6: The perceived cost of NWRC will negatively affect employees' NWRC attitude

4.5 Employee's Job Satisfaction

In addition to attitude and subjective norms, we add employees' job satisfaction as the other predictor of intention. Job satisfaction represents an affective response to specific work related facets in organizational context (Martin & Bennett, 1996). Stanton's study (2002) suggested lower job satisfaction leads to heavier Internet use. Galletta and Polak (2003) attributed Internet abuse to employee's detachment with their jobs and desire to disengage by substituting for other activities. Moreover, job satisfaction can be a surrogate measurement of measuring organizational justice at the individual level which

directly influences employees' behavioural intentions to NWRC. Therefore, we assume that:

H7: The employee's level of job satisfaction will negatively affect the employee's NWRC intention.

4.6 The Control Mechanisms

Since most organizations have already implemented some sorts of NWRC control mechanisms these days, we expect that higher level of control can increase the perceived cost of committing NWRC behaviours (Lee& Lee, 2002). By the same token, it might directly lower employees' intention to commit NWRC behaviour when they have higher intention to do NWRC:

H8: Tighter control leads to stronger relationship between perceived costs and NWRC attitude.

H9: Tight control leads to weaker relationship between NWRC intention and NWRC behaviour.

5. Research Methodology

5.1 Constructs Measurement Development

To ensure high measurement reliability, research constructs and measurements that had been used in previous studies were employed with modifications to suit the NWRC context. Table 1 below shows the sources of measurements for the constructs.

Table 1: Sources of Measurements for Constructs

Constructs	Item Sources
Benefit	Taylor&Todd(1995);Oravec(2002);Belanger&Slyke(2002);Guthrie&Gray(1996)
Cost	Skinner & Fream (1997)
Job Satisfaction	Gordon & Hensel's Marketing Scale Handbook
Attitude	Gordon & Hensel's Marketing Scale Handbook
Subjective norms	Karahanna, Straub & Chervancy (1999)
Intention	Gordon & Hensel's Marketing Scale Handbook
Behaviours	Thompson, et al. (1991); Siau et al.(2002) ; Guthrie & Gary (1996)
Habit	Limayem &Hirt (2003)
Control Mechanisms	Gary(1982)

The questionnaire employed the seven-point Likert scale. Moore and Benbasat (1991)'s sorting routine was used to ensure validity. Two rounds of sorting were conducted with 4 judges for each round. The Kappa scores averaged 0.77 and the average overall placement ratio of items within the target constructs was 0.89 for the unlabeled sorting, and 0.79 and 0.92, respectively, for the labelled sorting.

5.2 Data Collection

The target group of this research is full time employees who have easy access to the Internet from their own workstations or desktops. The acquaintances in companies distributed the questionnaires as coordinators. Between Feb 12, 2006 and Mar 5, 2006, 250 questionnaires in total were distributed to 28 companies and 179 were collected back

with 71.6% of a gross response rate. After deleting 12 questionnaires with missing data, 167 valid responses obtained with response rate of 66.8% .Male and Female comprise 58.7% and 41.3% of the sample, respectively. More than 62.9% of respondents have at least university education.

5.3 Measurement Assessment

5.3.1 Reliability

Reliability was tested by Cronbach's alpha and composite reliability. All the constructs have their reliability measures above the recommended level of 0.70 indicating adequate internal consistency (Nunnally, 1978) except for control mechanism. After the omission of items CTR1 and CTR4, reliability of the construct improved from 0.6372 to 0.8238 (Table 2).

Table 2: Summary of the Reliability Test for Constructs

Constructs	Items	Alpha if deleted	Cronbach's Alpha	Loading	Composite Reliability	AVE
Perceived Benefit	BNF1	0.8749	0.8786	0.7696	0.912	0.676
	BNF2	0.8410		0.8656		
	BNF3	0.8331		0.8849		
	BNF4	0.8338		0.8706		
	BNF5	0.8726		0.7165		
Perceived Cost	COST1	0.6890	0.7867	0.5742	0.847	0.738
	COST2	0.7564		0.7316		
	COST3	0.6850		0.9627		
Job Satisfaction	JOBSAT1	0.7432	0.8134	0.8510	0.885	0.794
	JOBSAT2	0.7397		0.4426		
	JOBSAT3	0.7492		0.8618		
Subjective Norms	SUBNM1	0.8755	0.8522	0.7791	0.906	0.797
	SUBNM2	0.7754		0.8879		
	SUBNM3	0.7639		0.9043		
	SUBNM4	0.8281		0.7848		
Habit	HABIT1	0.8002	0.8722	0.9202	0.907	0.713
	HABIT2	0.8455		0.9008		
	HABIT3	0.8938		0.6670		
	HABIT4	0.7963		0.8645		
Attitude	ATT1	0.9280	0.9448	0.9263	0.959	0.823
	ATT2	0.9341		0.8974		
	ATT3	0.9332		0.9063		
	ATT4	0.9278		0.9203		
	ATT5	0.9366		0.8859		
Intention	INTEN1	0.9584	0.9349	0.8964	0.957	0.882
	INTEN2	0.8598		0.9491		
	INTEN3	0.8573		0.9705		
Control mechanism	CTR1	0.7465	0.6372	**Item total Correlation**		
	CTR2	0.4532		0.6935	Nil	Nil
	CTR3	0.4616		0.7523		

	CTR4	0.6804				
	CTR5	0.4732		0.6023		

5.3.2Convergent Validity

Two tests were used to assess convergent validity: item loadings and average variance extracted. Chin (1998) recommended that the standardized item loading should be greater than 0.707. Accordingly, COST1, HABIT3 and JOBSAT2 were deleted. All the constructs passed AVE test with the values greater than 0.5 (Fornell & Larcker, 1981).

5.3.3 Discriminant Validity

Fornell and Larcker (1981) suggested two tests for discriminant validity: examine item loadings and the correlations between two constructs. For items loadings on stipulated constructs, we ran factor analysis with varimax rotation. Due to the loadings greater than the required 0.5 (Hair et al., 1998), BNF1 and SUBNM1 were deleted. A satisfying level of discriminant validity was also achieved with larger square root of AVE for a particular construct than the correlations between it and the other constructs (Chin, 1998). As control mechanism will be used only for clustering, it was dropped out of discriminant validity test.

Table 3: Results of Factor Analysis for Reflective Constructs

	1	2	3	4	5	6	7	8
INTEN1	0.3490	0.2362	0.1501	0.7898	0.1011	-0.0759	-0.0517	0.0431
INTEN2	0.3458	0.1412	0.2517	0.7201	0.3907	-0.0812	-0.0775	0.0401
INTEN3	0.3854	0.1648	0.2291	0.7710	0.2978	-0.0551	-0.0610	-0.0191
ATT1	0.8108	0.2335	0.2126	0.2479	0.1691	-0.1014	-0.0583	0.0506
ATT2	0.8069	0.1968	0.1384	0.2516	0.1610	-0.1033	-0.0716	0.0841
ATT3	0.7928	0.1814	0.1727	0.2149	0.3089	-0.0231	0.0168	0.0344
ATT4	0.8379	0.1361	0.1595	0.1976	0.2521	-0.0355	-0.0093	0.0752
ATT5	0.8449	0.2384	0.1451	0.1346	0.0912	0.0503	-0.1233	0.0429
HABIT1	0.4440	0.1547	0.2013	0.3316	0.6954	0.0103	-0.0711	-0.0003
HABIT2	0.3062	0.1812	0.1457	0.2021	0.8218	0.0120	0.0400	0.0167
HABIT4	0.4259	0.2209	0.2710	0.3443	0.5650	-0.0978	-0.0947	-0.0113
BNF1	0.3523	0.4662	0.2097	0.3357	0.3062	-0.0939	-0.0305	0.0437
BNF2	0.3817	0.6021	0.2211	0.1249	0.4453	0.0798	-0.0231	0.0912
BNF3	0.2750	0.7155	0.2560	0.1953	0.2204	0.0385	-0.0743	0.1542
BNF4	0.3588	0.7212	0.2517	0.0585	0.1853	-0.0486	-0.1239	0.0915
BNF5	0.1168	0.8320	0.1065	0.1538	-0.0273	0.0634	0.0327	0.1700
COST1	0.1470	-0.1236	-0.0737	0.0082	0.0186	0.1095	0.8438	-0.0730
COST2	-0.2577	-0.0802	-0.1432	-0.1037	-0.0490	-0.0427	0.7716	0.1783
COST3	-0.0977	0.0894	0.0017	-0.0554	-0.0253	0.2086	0.8222	-0.1244
JOBSAT1	0.0303	0.1577	-0.0468	0.1397	0.0233	0.1355	-0.0689	0.8671
JOBSAT3	0.1253	0.1523	0.1727	-0.0818	0.0010	0.0036	0.0181	0.8243
SUBNM1	0.2127	0.3187	0.4153	0.3664	0.2282	0.0032	-0.2318	0.1143
SUBNM2	0.1412	0.2737	0.7399	0.2154	0.2129	-0.1274	-0.1205	0.2248
SUBNM3	0.2348	0.1554	0.8046	0.2109	0.2470	-0.0837	-0.0481	0.1424
SUBNM4	0.3100	0.2422	0.7830	0.1095	0.0200	-0.0498	-0.0692	-0.1526
CTR2	-0.0408	-0.0658	-0.1239	0.0069	-0.0404	0.8909	0.0550	-0.0988

CTR3	-0.0677	0.0456	-0.1183	-0.0473	-0.0624	0.8851	0.0394	0.0498
CTR5	-0.0114	0.0807	0.0951	-0.1079	0.0999	0.7558	0.2104	0.2438

Table 4: Square Root of AVE vs. Correlations among Constructs

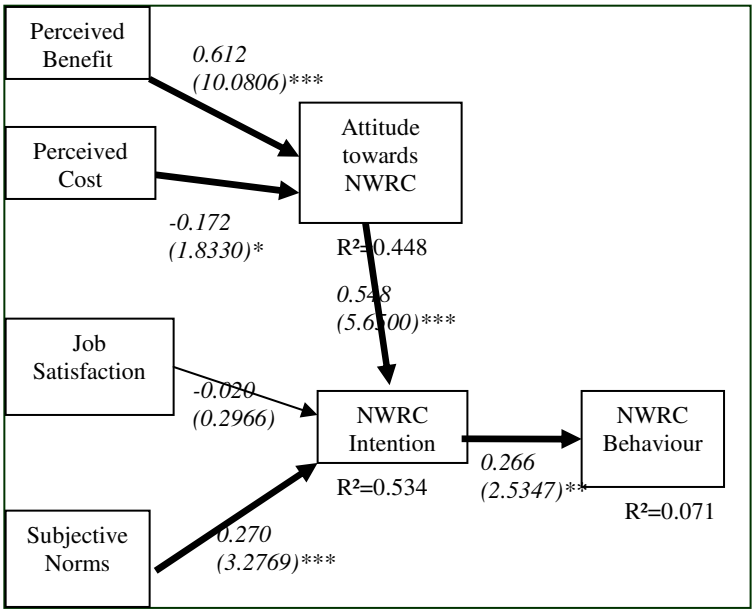
Constructs	BNF	COST	JOBSAT	SUBNM	ATT	INTEN	HABIT	BEH
BNF	**0.822**							
COST	-0.244	**0.859**						
JOBSAT	0.409	-0.028	**0.891**					
SUBNM	0.695	-0.235	0.181	**0.896**				
ATT	0.598	-0.315	0.185	0.595	**0.907**			
INTEN	0.608	-0.313	0.189	0.637	0.686	**0.980**		
HABIT	0.629	0.226	0.021	0.243	0.205	0.169	**0.903**	
BEH	0.662	-0.263	0.137	0.618	0.683	0.703	0.340	**N.A**

6. Hypothesis Testing and Results Discussion

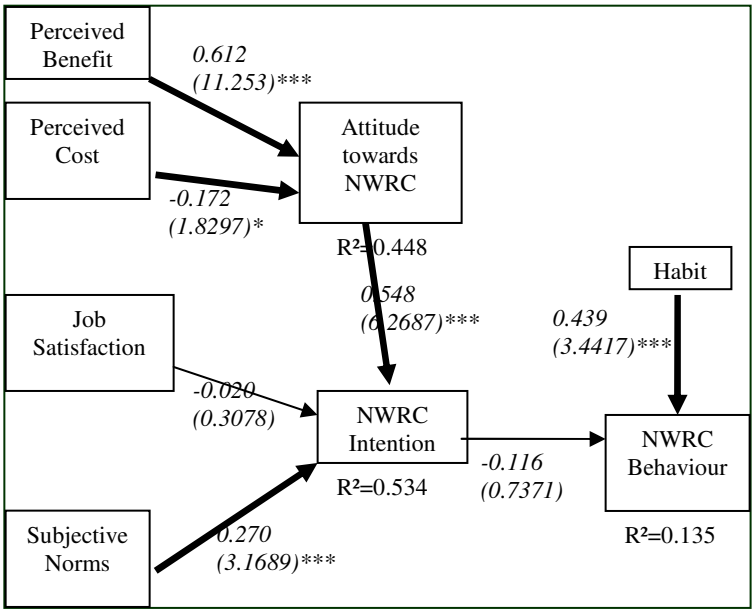
With the adequate measurement model, the structural model was tested with PLS Graph 3.00. The results are presented in figure2 below.

Figure 2: Test Result for Structural Models

2.1 Test of Structured Model without Habit for All Data



2.2 Test of Structured Model with Habit for All Data



Significant at p<0.1* significant at p<0.05**significant at p<0.01***; (X) X denote T statistics

The findings supported six out of seven of our primary hypotheses (H1, H2, H3, H4, H5 and H6) based o the first figure. NWRC intention (H1) turns out to be the significant indicator of NWRC behaviours. The perceived benefit (H5) of NWRC exerts the largest positive effect on attitude towards NWRC with a path coefficient of 0.612 ($p < 0.01$) while the perceived cost (H6) have negative impact on NWRC attitude at $p<0.1$

significant level. The attitude (H3) towards NWRC and the subjective norms (H4) positively affect NWRC intention. However, the result in the second figure suggests that habit (H2) overrule other rational decisional factors. Around 13.5 % of NWRC behaviour is accounted for after including habit.

6.1 The Importance of Perceived Benefits in NWRC

As shown in the first diagram in Figure 2, the hypotheses regarding the relationship between perceived benefit and NWRC attitude supported at the $p \leq 0.01$ significance level with the largest path coefficient of $\beta=0.612$, which implies employees are doing NWRC mainly due to its perceived benefits including fun and enjoyment, learning, team building and facilitating communication. This implies that to keep the right balance between imposing controls and giving a certain degree of autonomy for NWRC can make NWRC beneficial to the whole organization.

6.2 The role of habit in NWRC

However, as shown in the second diagram in Figure 2, when habit was included as one of determinants of NWRC behaviours, behavioural intention was no longer a significant predictor of NWRC behaviour in the model and so did other variables except for habit. The result suggests that habit may overrule other rational decision factors. In fact, the result is consistent with findings of Landis, Triandis & Adamopoulos (1978) based on TIB. In the presence of habit, the decision process tends to be characterized by a preference for relatively simple and heuristic-based choices. In addition, Verplanken & Aarts (1997) provided empirical evidence that habit seems to attenuate the processing of information about the context.

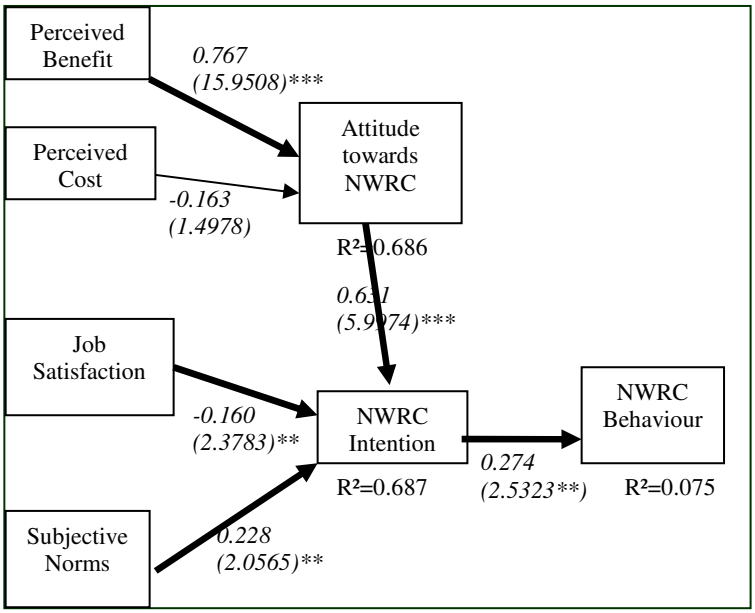
Meanwhile, Triandis (1979) argued that relative influence of habits and behavioural intentions on actual behaviour is a function of time: As time goes by, the importance of behavioural intentions on actual behaviour gradually decreases while that of habits or automatic behaviour increases. The finding suggests that if employers are able to prevent their employees' habitual behaviours of NWRC at the beginning, the employees' NWRC behaviour could be less intensive over time.

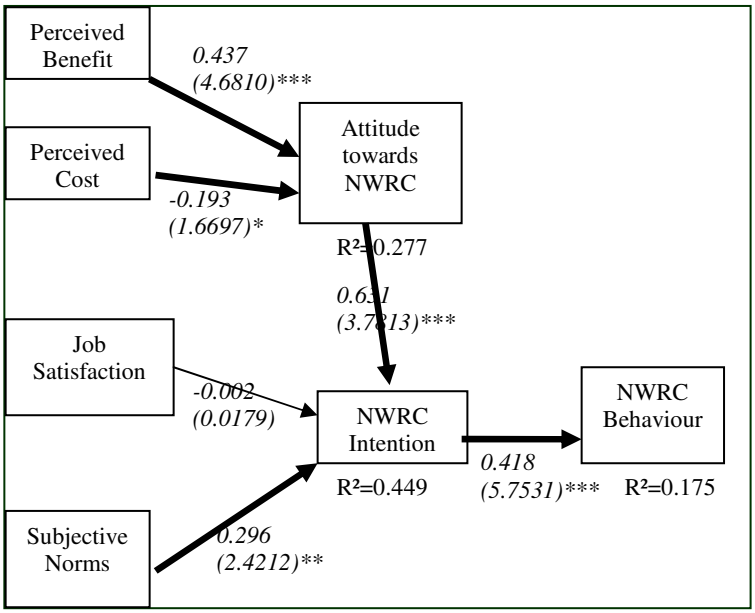
6.3 The level of job satisfaction related to NWRC intention

The only one factor which is consistently insignificant in figure 2 is job satisfaction. Thus, we conducted post-hoc analysis after dividing the sample into two groups by K-mean clustering Algorithm: the high job satisfaction group vs. the low job satisfaction group. The result in figure 3 shows that the effect of job satisfaction negatively affects the intention when employees with low level of job satisfaction ($\beta=-0.160$, $p \leq 0.05$) while the relationship between job satisfaction and NWRC intention is insignificant for the group of employees who satisfy with their jobs. This implies that job satisfaction plays a moderating role in NWRC behaviour and is significant especially when people are not satisfied with their organizations.

Figure 3: Test Result for Model with Different Level of Job Satisfaction

3.1 Test of Structured Model with Low Level of Job Satisfaction **3.2 Test of Structured Model with high Level of Job Satisfaction**





Significant at p<0.1 * significant at p<0.05**significant at p<0.01***; (X) X denote T statistics

6.4 The relationship between NWRC and level of control mechanisms

In order to examine the second research question, we conducted the other analysis by clustering the sample according to control mechanisms (Table 5).

Table 5: Summary of Clustering Result

Cluster 1(Tightly Controlled)					
Constructs	**Num of cases**	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**
CTR2	96	1	7	4.320	1.277
CTR3				4.160	1.019
CTR5				4.480	1.179
Cluster 2(Loosely Controlled)					
Constructs	**Num of Cases**	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**
CTR2	71	1	6	1.900	1.044
CTR3			4	1.989	0.903
CTR5			7	2.170	1.230

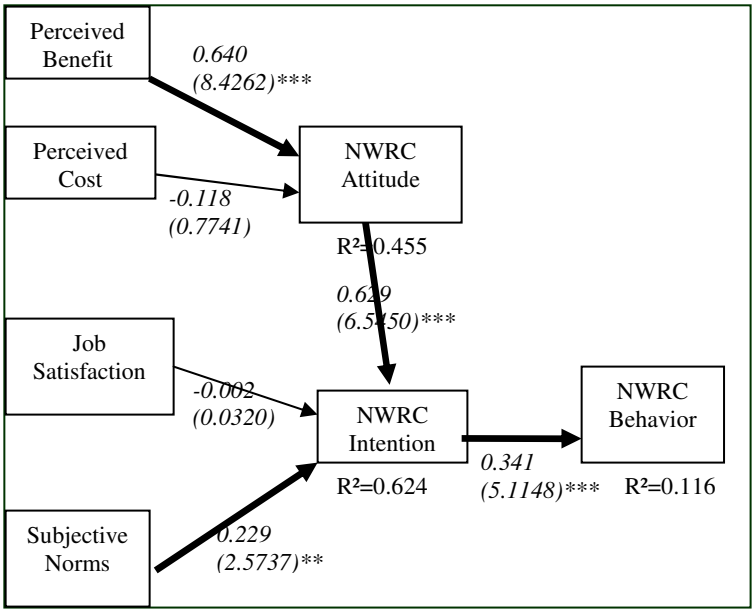
Unexpected result was obtained for hypotheses related to control mechanisms (H8, H9). The path coefficient between perceived cost and NWRC attitude is insignificant in the tightly controlled group while it is significant in the loosely controlled group although it is significant at p<0.1 level. The same goes for the path between intention and behaviour. The path is significant at p<0.01 in the tightly controlled group while it is significant at p<0.1 in the loosely controlled group.

This could be explained by the traditional control-performance theory mentioning that tight control can increase organizational performance only in the short run but decrease it in the long run as it might harm organizational dynamics and agility. Furthermore, as suggested by Skinner & Fream (1997), light punishment of computer abusers could cause the ineffectiveness of control. If employees in tightly controlled group notice that the actual punishment will not be as restrictive as stated by the Internet usage policies, they may not take it seriously, and as a consequence, NWRC behaviour is not affected. Previous literature suggests that how a system is designed, implemented and

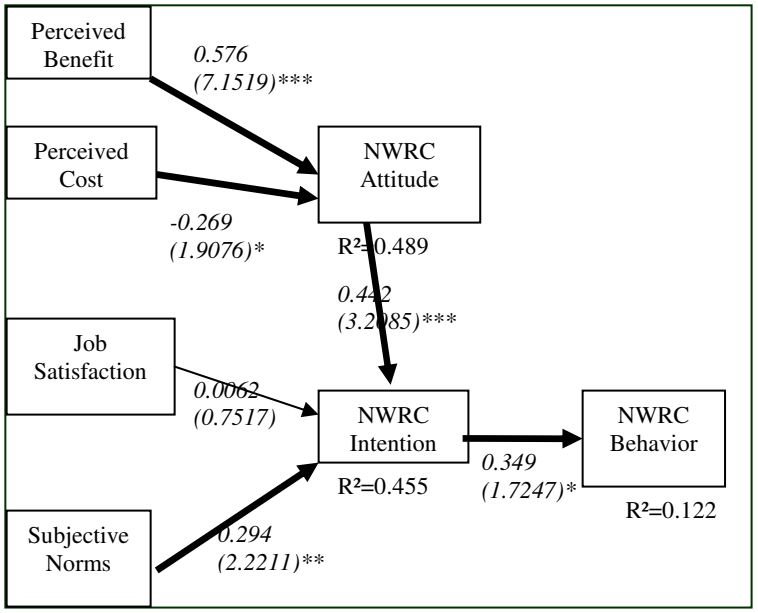
used affect employee reactions and the system's effectiveness (Stanton, 2000). The effectiveness of NWRC control mechanisms would be increased if it fits for the employee's task needs (Goodhue, 2005) or organizational culture.

Figure 4: Test Result for Model with Different Level of Control Mechanisms

4.1 Test of Structured Model for Tightly controlled group



4.2 Test of Structured Model for loosely controlled group



Significant at p<0.1 * significant at p<0.05**significant at p<0.01***; (X) X denote T statistics

6.5 Limitations and Future Research Directions

Although this study provides some interesting findings, there are two main limitations in our study that should be taken into account when interpreting the results.

Firstly, self-report measure of behaviour was obtained as the measurements. This is due to a limitation of our ability to monitor the actual usage pattern of NWRC. Future research can consider unobtrusive observation for the dependent measurement to prevent common method bias.

Secondly, as the model explained only around 13.5% of the variance in NWRC behaviours, additional factors can be included for future studies. More specifically, both personal factors such as ethics and organizational factors such as culture can be examined in addition rational factors in this study.

7. Conclusions

Overall, this research contributed to the NWRC literature by suggesting how different factors would affect NWRC so that organizations can design more appropriate management strategies to avoid losses from NWRC behaviours in the future. It has extended the literature in three significant aspects. First, we developed a model which examined benefits and cost at the same time based on solid theoretical perspectives including cost-benefit paradigm, theory of reasoned action and its extended theory, and neutralization theory.

Secondly, by comparing two different groups of employees with different levels of control mechanisms, we illustrated the impact of control mechanisms as a moderator between perceived cost and attitude, and between intention and behaviour. Moreover, we found the possible moderating role of job satisfaction which used to be an independent variable in NWRC research.

Finally, our study offers some insights to managers on how to manage NWRC effectively according to the level of job satisfaction and the control involved in NWRC. It also points out the importance of managing employees' habitual behaviour in the first place. Based on this understanding, organizations can set up strategies to manage this phenomenon more efficiently in the future.

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