SELF-REGULATION, INDIVIDUAL CHARACTERISTICS AND CYBERLOAFING

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Abstract

Cyberloafing- a form of counter-productive work behaviour has been found to be affected by several personality and contextual factors. An important relationship that has not been adequately explored in the past is how cyberloafing behaviours could be conceptualized as a failure to self-regulate. In this paper, we examine the impact of this lack self-regulation on cyberloafing. We also examine the effects of individual characteristics (self-efficacy, conscientiousness and achievement orientation) in moderating the relationship between self-regulation and cyberloafing. Results showed that all the individual characteristics are significant moderators. Implications are discussed.

Keywords: Cyberloafing, Self-regulation, Self-Efficacy, Conscientiousness, Achievement orientation
1. INTRODUCTION

Recent developments in online technologies have redefined the confines in which internet can be accessed, allowing us to tap on the World Wide Web on the go. Although the internet has brought about greater efficiency in our daily lives, it is difficult for us not to recognize that it has also brought along with it several caveats, one of them being the use of workplace internet access for non-work related purposes (Lim and Chen, in press; Lim, Teo & Loo, 2002). Anecdotal evidence revealed that some employees spend as much as 6 hours per day surfing the internet at their workplace (Fox, 2007). It is not surprising that non-work related internet usage and work procrastination have lead to huge monetary and productivity losses for organizations (DebtCubed, 2006). Thus, it is apparent that non-work related internet use constitutes one of the most prominent counter-productive activities that modern organizations have to grapple with.

Although previous studies have examined non-work related internet usage as an outcome of personality (e.g. Zoghbi, 2007), little has been done to investigate how different personality variables jointly affect the abuse of internet access. This paper extends the prior literature by examining how several different personality variables jointly predict non-work related internet use.

1.1 Cyberloafing

Consistent with Lim (2002), we defined cyberloafing as “voluntary acts of employees’ using their companies’ internet access during office hours to surf non-work related web sites for personal purposes”. In the present study, we examined cyberloafing in an academic setting. Specifically, we examined the phenomenon of students engaging in personal internet use during lectures and classes. Although students’ usage of internet during classes is different from employees’ usage of the internet for personal purposes during work, both activities are analogous in that both activities constitute non-productive use of time during work. When students use internet for personal purposes during classes, they are not focusing their efforts and attention on learning and this is similar to employees not focusing their energies on work. Based on these arguments, we believe that studying students’ use of internet during classes may shed light on employees’ usage of internet during work.

From a more general perspective, cyberloafing can be classified as a form of procrastination. This is because when students or employees cyberloaf, they are delaying work till a later time period (Lay & Silverman, 1996). Researchers argued that personality, specifically, the BIG FIVE (i.e. Extraversion, Neuroticism, Agreeableness, Openness to new experiences and Conscientiousness) plays an important role in determining why some people procrastinate more than others. Research has shown that individuals who are high on conscientiousness tend to engage in less loafing behaviours (Colbert, Mount, Harte, Witt & Barrick 2004). In addition to the Big Five, those who are perceived to have a high degree of impulse control tend to be able to regulate their attentional processes better and thereby loaf less (Eerde, 2000). In this paper, we explore the role of the personality variable and self-regulation in predicting the degree to which individuals engage in non-work related internet use.

2. THEORETICAL FRAMEWORK AND HYPOTHESES

Human agency or volition plays a critical role in the social cognitive theory (Bandura, 1986). Bandura argued that “what people think, believe and feel affects how they behave” (Bandura, 1986, p25). The ability of individuals to have personal agency and exercise control highlights the importance of self-regulation. People are known to have two kinds of goals i.e. long term goals (for e.g., eating healthy food or meeting a deadline) and short-term goals (for e.g. eating junk food in one meal). We often face discrepancy in our goals. Although fulfilment of short-term goals may bring about instant gratifications, individuals need to keeps their focus on long term goals by resisting short term temptations or impulses. This is done through a process of self-regulation or self-control. To put this in the cyberloafing context, although cyberloafing is enticing, the self-regulatory system will prevent the individual from volitionally engaging in cyberloafing since cyberloafing will detract individuals from their long term goals of task performance.

However, the self regulatory mechanism may breakdown and such breakdowns of self-regulation and control is referred to as self-regulation failure (Carver & Scheier, 1981). Although Carver & Scheier
(1981) described self-regulation failure as a behavioural state, we do believe that self-regulation has a trait component i.e. we believe that some individuals are better self regulators than others and such differences in self-regulation are stable across individuals. In this study, we examine how trait self-regulation impact cyberloafing behaviour. When individuals engage in cyberloafing, it is likely to be a result of their inability to regulate their attentional resources towards relevant tasks. This is especially problematic for low self regulators as they find it difficult to resist short term gratifications derived from cyberloafing. For high self regulators, they are more likely to be able to keep their attention focused on their tasks and are better able to resist the temptation to cyberloaf. Thus, we predict that:

**H1:** Self-regulation is negatively related to cyberloafing such that highly self regulated individuals will cyberloaf less than lowly self regulated individuals.

Prior research has studied the relationship between self-regulation and variables such as achievement orientation, conscientiousness and self-efficacy (Roberts, Chernyshenkoo, Stark & Goldberg, 2005). These variables have been found to jointly predict outcomes such as academic achievement (e.g. Bouffard, Bouchard and Goulet, 2005). Consistent with these studies, we shall examine how these constructs interact to jointly affect relationship between self-regulation and cyberloafing.

**Self-Efficacy:** Self-efficacy is defined as the ability of individuals to perceive themselves as being highly focussed and having a clear sight of their goals (Bandura, 1997). Bandura (1997) argued that those who score high on self-efficacy will tend to believe that they will perform well on a given task. These highly efficacious individuals will also have a ‘perception’ that they are capable of moderating and planning their behaviours in such a way that they will regulate their effort consistently over a period time (Locke & Latham, 1990). Thus, self-efficacy should amplify the negative relationship between self-regulation and cyberloafing since individuals who are high on self-efficacy will perceive themselves to be good regulators and therefore not cyberloaf.

**H2:** Self-efficacy will moderate the relationship between self-regulation and cyberloafing such that the relationship is stronger for those who are high on self-efficacy than those with low self-efficacy.

**Conscientiousness:** Conscientiousness is the ability to be organized and be responsible (Barrick & Mount, 1991). Individuals who are high on conscientiousness are also confident of their ability to be orderly and degree to which they can control their behaviours to reach their long term goals. Individuals who are not conscientious will be less able to inhibit their impulses (Costa & McCrae, 1992). Thus, low self regulators who are less conscientious will cyberloaf more.

**H3:** Conscientiousness will moderate the relationship between self-regulation and cyberloafing such that the relationship will become stronger for those who are high on conscientiousness than those who are low on conscientiousness.

**Achievement Orientation:** Individuals who are high on achievement orientation are found to be “more determined to pursue their goals, perceive greater urgency in pursuing their goals and are willing to invest time and effort to pursue their goal” (Diehl, Semegon, & Schwarzer, 2006). For high achievement orientated individuals who are also highly self regulated, they are highly focused will direct their efforts towards goal fulfilment, thus cyberloafing less than high achievement oriented individuals who are lowly self regulated.

**H4:** Achievement orientation will moderate the relationship between self-regulation and cyberloafing such that the relationship is stronger for individuals with high achievement orientation than those with low achievement orientation.
3. METHODS

Participants: 128 undergraduate students (49 males and 79 females) from a large university in Asia participated in this study. Students were asked to report on their cyberloafing activities during lectures i.e. whether they use the internet for personal purposes during class. Data were collected using survey questionnaire.

3.1 Measures

Self-Efficacy: We measured this construct with 10 items taken from the General Self-efficacy Scale developed by Schwarzer & Jerusalem (1995). These items were designed to assess optimistic self-beliefs to cope with a variety of difficult demands in life. Items were anchored on a seven point Likert scale from (1) Strongly Disagree to (7) Strongly Agree.

Conscientiousness: Conscientiousness was measured using 9 items from the Big Five Scale (John & Srivastava, 1999). Items were anchored on a 7 point Likert scale (1) Strongly Agree to (7) Strongly Disagree.

Achievement Orientation: This construct was measured using a 16 item from the Achievement Orientation Scale (Jackson, 1974). One item (‘I find it easy to forget about my work when I’m on holiday’) was removed due to poor factor loadings. Items were anchored from (1) Strongly Disagree to (7) Strongly Agree.

Self-Regulation: We measured this construct with 10 items from Self-Regulation Scale or SRS (Schwarzer, Diehl & Schmitz, 1999). One item (‘When I worry about something, I cannot concentrate on an activity’) was deleted from the scale due to poor factor loading. Items were anchored from (1) Strongly Disagree to (7).

Cyberloafing: Cyberloafing was assessed using a combination of 21 items from Lim (2002) and Blanchard and Henle (2008). Items on this scale for cyberloafing consisted of browsing activities as well as emailing activities. Three items were deleted from the scale due to poor factor loadings. These items were visiting employment websites, online shopping and checking share price, all three of which are not very representative or relevant to a student sample and were thus deleted. All items anchored from (1) Not at all to (7) All the time.

4. RESULTS

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Self-Efficacy</td>
<td>4.88</td>
<td>0.81</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.88)</td>
</tr>
<tr>
<td>2. Conscientiousness</td>
<td>4.42</td>
<td>0.81</td>
<td>0.17</td>
<td>(0.81)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Achievement Orientation</td>
<td>4.68</td>
<td>0.70</td>
<td>0.44*</td>
<td>0.35*</td>
<td>(0.80)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Self-Regulation</td>
<td>4.37</td>
<td>0.85</td>
<td>0.36*</td>
<td>0.49*</td>
<td>0.35*</td>
<td>(0.81)</td>
<td></td>
</tr>
<tr>
<td>5. Cyberloafing</td>
<td>2.61</td>
<td>1.17</td>
<td>0.06</td>
<td>-0.21*</td>
<td>0.02</td>
<td>-0.14</td>
<td>(0.95)</td>
</tr>
</tbody>
</table>

Table 1: Descriptive statistics, correlations and reliabilities for all variables.

* Reliabilities are shown in parentheses along the diagonal *p<0.05
Table 1 shows that the variables are related in the expected directions. Results from the regression analysis indicated that self-regulation is marginally and negatively associated with cyberloafing ($\beta =-.14, p=.06$). This provided partial support for Hypothesis 1.

Hierarchical regression analyses were used to test the moderation hypotheses. All the variables were centred to minimize multicollinearity between the interaction terms and their components. Results from hierarchical regression analysis (Table 2) indicated that the self-efficacy significantly moderate the relationship between self-regulation and cyberloafing ($\beta =-.36, p<.05$). Similarly, the interaction between conscientiousness and self-regulation significantly predicts cyberloafing ($\beta =-.29, p<.05$). Lastly, results also indicated that the interaction between achievement orientation and self-regulation significantly predicts cyberloafing ($\beta =-.38, p<.05$).

<table>
<thead>
<tr>
<th></th>
<th>Step 1 ((\beta))</th>
<th>Step 2 ((\beta))</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SELF-EFFICACY</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Regulation (SR)</td>
<td>-0.25*</td>
<td>-0.20</td>
</tr>
<tr>
<td>Self-Efficacy (SE)</td>
<td>0.18</td>
<td>0.126</td>
</tr>
<tr>
<td>SR x SE</td>
<td>-0.36*</td>
<td></td>
</tr>
<tr>
<td>$\Delta F (1, 124)$</td>
<td>2.11</td>
<td>9.49*</td>
</tr>
<tr>
<td>$\Delta R^2$</td>
<td>0.03</td>
<td>0.07</td>
</tr>
<tr>
<td><strong>CONSCIENTIOUSNESS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Regulation (SR)</td>
<td>-.06</td>
<td>-.09</td>
</tr>
<tr>
<td>Conscientiousness (C)</td>
<td>-.27</td>
<td>-.31*</td>
</tr>
<tr>
<td>SR x C</td>
<td>-0.29*</td>
<td></td>
</tr>
<tr>
<td>$\Delta F (1, 124)$</td>
<td>3.02*</td>
<td>3.98*</td>
</tr>
<tr>
<td>$\Delta R^2$</td>
<td>0.05</td>
<td>0.03</td>
</tr>
<tr>
<td><strong>ACHIEVEMENT ORIENTATION</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-Regulation (SR)</td>
<td>-.23</td>
<td>-.24</td>
</tr>
<tr>
<td>Achievement Orientation (AO)</td>
<td>.125</td>
<td>.12</td>
</tr>
<tr>
<td>SR x AO</td>
<td>-0.38*</td>
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<tr>
<td>$\Delta F (1,124)$</td>
<td>1.53</td>
<td>7.18*</td>
</tr>
<tr>
<td>$\Delta R^2$</td>
<td>0.02</td>
<td>0.05*</td>
</tr>
</tbody>
</table>

N =128  \(p < 0.05\)

Table 2: Results of moderation analyses on cyberloafing

To determine if the patterns of interactions support the directions and relationships we proposed in the research hypotheses, we graphed the interaction effects. The graphs are shown in Figures 2 to Figure 4. Consistent with our hypothesis the graphs suggest that self-efficacy, conscientiousness and achievement orientation are significant in moderating the relationship between self-regulation and cyberloafing in the same direction as predicted by our hypotheses. Implications of the interactions are discussed in the next section. Given these results, hypotheses 2, 3 and 4 are supported.

![Figure 2: Moderating effect of Self-efficacy on Self-regulation and Cyberloafing](image)
5. DISCUSSION

Previous research suggests that dispositional and contextual factors are important in predicting cyberloafing. In this paper we argued that cyberloafing is the outcome of inhibited self-regulation. Individuals who are unable to regulate their attention or show self-control were predicted to engage in more counterproductive behaviours. Self-regulation, as a dispositional variable, was examined along with its interaction with other personality variables such as self-efficacy, conscientiousness and achievement orientation.

The results indicated that personality variables significantly moderated the relationship between self-regulation and cyberloafing. The interaction plots highlighted that there was a cross-over effects in the interaction between self-efficacy and self-regulation. The plot revealed that low self-regulators who are highly efficacious cyberloaf more than low self-regulators who are less efficacious. The plot also revealed that highly regulated and efficacious individuals cyberloaf less than highly regulated and non-efficacious individuals.

These relationships are likely to be due to the fact that highly efficacious individuals believe strongly in their abilities to complete their tasks. Control theory suggested that achieving desired goals depends on the perception of preparedness to achieve that goal (Power, 1973). In order to achieve the desired goals, individuals will allocate resources to reduce the discrepancy between current state and desired end goals. For highly efficacious individuals, they tend to be confident about achieving their goals and their perceived discrepancy between current state and end goal is lower. Given the lower level of perceived discrepancy, highly efficacious individuals will allocate fewer resources towards meeting their desired goal (Vancouver, Thompson, & Williams, 2001). The lower level of perceived discrepancy between current state and desired end goal may result in a sense of overconfidence among efficacious individuals and allocating fewer resources to achieve their desired end goals can ultimately hurt their task performance as they underestimated the amount of efforts required.
For highly efficacious but lowly regulated individuals, overconfidence is especially detrimental. For these individuals, they tend to erroneously believe that they need lesser resources to fulfill their goals than what is actually required and engaging in some non-productive activities have no bearing on their task performance. Since they are unable to resist temptations and regulate their behaviors, these individuals will engage in more non-work related activities such as cyberloafing than highly regulated efficacious individuals. For highly regulated efficacious individuals, although they might be overconfident about their abilities, their enhanced self-regulatory abilities kept them focused on their task and inhibit them from engaging in non-work related activities.

For individuals who are low on self-efficacy, they tend to have irrational beliefs about their inabilities to succeed in tasks. A feeling of non-confidence and fear of failure results in them spending more time procrastinating rather than expending their energy on the relevant task (Bandura, 1997). For lowly efficacious individuals, regardless of whether they are high or low self-regulators, they are likely to cyberloaf since they perceive themselves as being incapable of achieving their desired goal. A similar set of explanations can be used to account for the cross over relationship between achievement orientation, self regulation and cyberloaing.

The findings from this study emphasize that being high on self-efficacy or achievement orientation does not mean cyberloafing less; instead these relationships are contingent on individuals’ self-regulatory abilities. Individuals with high self-efficacy and achievement orientation but poor self-regulation tended to cyberloaf the most. For highly efficacious and achievement oriented individuals, self-regulation is the key in determining their engagement in non-work related activities during work.

The results also highlighted the importance of conscientiousness on cyberloafing. Individuals who were high on conscientiousness tended to cyberloaf less as compared to those who were less conscientious. Conscientiousness also interacted with self-regulation such that highly conscientious and regulated individuals cyberloaf the least. This finding is not surprising as individuals who are highly conscientious are known to procrastinate less and stay focused on their long term goals.

There are several reasons why highly conscientious individuals are more self-regulated and cyberloaf the least. Firstly, these individuals will be able to balance their interest between their long term and short term plans and therefore resist impulses. Secondly being high on conscientiousness will lead individuals to deliberate the importance of their current mode of action and weigh these actions against their long term interest. When short term gratifications do not reconcile with long term goals, these are also able impose a self-restraint constraint (McCrae, 1976). Putting this in context, these individuals are able to put off cyberloafing until they complete their tasks. From this, we realize the importance of conscientiousness as a trait variable in employee selection.

6. LIMITATIONS

Though this study has examined production deviance from a dispositional perspective and has contributed to the ongoing research on cyberloafing, it is not free of limitations. First, the cross-sectional nature of the study does not allow us to draw causal linkages between the predictors and the outcomes. Second, this study did not explore the context in which cyberloafing behaviours were conducted. Extant research has established that contextual factors interact with personality and these jointly affect cyberloafing. Therefore, future research might want to explore 3-way interaction between contextual factors, personality and self-regulation in predicting cyberloafing. Finally, since the participants were undergraduate students, findings from this study are difficult to generalize to the workplace setting. A follow-up study in organizations might help us understand this issue better.

7. CONCLUSION

Cyberloafing is a pervasive problem in modern workplace and self-regulation is an important determinant of cyberloafing behaviour. This study illustrates that cyberloafing is a form of failure in self-regulatory system and also highlights the role of personality variables in augmenting the relationship between self regulation and cyberloafing.
References


