

IPA

International Journal of Psychology
Vol. 12, No. 2, Summer & Fall 2018
PP. 147-168

**Iranian Psychological
Association**

Predicting Cyberloafing through Psychological Needs with Conscientiousness and Being Goal-Oriented as Mediators among University Students

Hamed Sarhangpour, PhD Candidate

Faculty of Humanities and Social
Sciences
University of Mazandaran

Fereshteh Baezzat, PhD*

Faculty of Humanities and Social
Sciences
University of Mazandaran
Baezzat12@gmail.com

Abbas Akbari, PhD Candidate

Faculty of Humanities and Social Sciences
University of Mazandaran

Received: 26/ 6/ 2017 Revised: 2/12/ 2017 Accepted: 22/ 2/ 2018
Doi: 10.24200/ijpb.2018.60304

The aim of this correlational study was to predict cyberloafing through basic psychological needs with conscientiousness and goal-orientation as mediators. The statistical population consisted of all undergraduate students of the faculty of Humanities at Mazandaran University during the 2016 academic year. A total of 321 students were selected using stratified proportional sampling. To collect data, the Cyberloafing scale (Doorn, 2011), Conscientiousness of the Big Five Personality Questionnaire (Goldberg, 1992), Mastery Goal Orientation scale (Midgley, Kaplan & Middleton, 1998), and the Psychological Needs Questionnaire based on William Glasser's theory (Burns, Vance, Szadkierski, & Stockwell, 2006) were used. AMOSS-22 software for structural equation analysis of the obtained data. According to the results, the need for survival and the need for belonging could indirectly predict cyberloafing with conscientiousness and mastery goal orientation as mediators. Moreover, the needs for fun, mastery goal orientation, and conscientiousness could directly predict cyberloafing.

Keywords: cyberloafing, basic psychological needs, conscientiousness, mastery goal orientation

Since their advent and subsequent rapid and continuous growth, the Internet and communication technologies have become important parts of the reality of human life. Thus, the Internet and cyber activities are of utmost importance (Yilmaz, Yilmaz, Ozturk, & Sezer, 2015). Given that each method, tool, or technology can have an impact on different aspects of human life, the use of the Internet has been also associated with its own opportunities and threats (Seymour & Nadasen, 2007). Likewise, the effect of the Internet on individuals has become so significant that in recent years, some researchers have noted that the multiple digital existence of some individuals is continually replacing their physical one (Belk, 2014; Elwell, 2014). Although the results of research in this domain have revealed that the use of the Internet can lead to increased individual productivity, improved communications, and progress (Seymour & Nadasen, 2007), everyone's useful time can be squandered by unintelligent use of this technology, resulting in what is called "cyberloafing" or "cyberslacking" (Vitak, Crouse & Larose, 2011; Askew, Buckner & Taing, 2014).

Furthermore, the human factor or intention can play a significant role in the presence or absence of behaviors according to the cognitive-social theory (Bandura, 1986). In this respect, Bandura believed that "what people think of, believe in, and feel can influence their behaviors," (Bandura, 1986, p. 25). Therefore, the human ability to have an individual factor and control an external behavior indicates the importance of personality traits among individuals. It should be noted that all people usually have two types of goals; the first category comprises long-term goals (such as the use of healthy food or doing a job by a due date), and

the second category is associated with short-term ones (such as eating unhealthy and fast foods and enjoying it). Thus, most individuals need to choose between these two categories when faced with them. Despite the fact that the fulfillment of short-term goals can lead to instant satisfaction, people should pay attention to long-term goals by resisting short-term temptations and impulses. In addition to personality traits, the type of individual goal orientation is also one of the effective factors in this regard. Despite the attractiveness of involvement in activities known as the concept of cyberloafing and given that these activities can reduce overall individual efficiency, the avoidance of such activities can facilitate the achievement of long-term goals (cited in Prasad, [Lim & Chen, 2010](#)).

“Cyberloafing” refers to the use of the Internet during work hours for personal purposes ([Lim & Chen, 2012](#)). The most common behaviors known as cyberloafing include sending emails and personal messages, surfing websites, shopping, playing online games, and using social networks ([Piowtroski, 2013](#)).

This study considered William Glasser’s basic psychological needs as another variable, and it was assumed that such a variable should have an effect on predicting cyberloafing. In this respect, the Choice Theory is one of the theories delineating basic needs. The Choice Theory (1992), introduced by William Glasser, emphasizes five basic human needs which are internal, universal, dynamic, and consistent with each other: survival/health, love/belonging, self-worth/empowerment, freedom, and fun/enjoyment ([Trigonaki, 2002](#)). Survival includes human health needs, continuation of life and reproduction, need for security, and academic success. The need for power, prestige, respect, recognition by others; taking enjoyment from competitions; the fear of vulnerability; making efforts; and fame due to endeavors

and achievements are among the needs associated with self-worth/empowerment. Freedom refers to the control of one's lifestyle, selection of desired options, freedom of speech, cooperation with favorite people, continuation of desired occupation or activity, and being free from physical or psychological discomforts such as fear, stress, disrespect, and monotony. Fun/enjoyment covers the need for pleasure, joy, laughing, playing, and having leisure time; and love/belonging is comprised of individual love and intimacy, attention to one's health status and that of other individuals, seeking acquaintance with other people, having close relationships with friends, feeling comfortable with family, and having satisfactory relationships with oneself and others (Strishko, 1997; Mishler, 1999; Frey, 2005; Turkdogan, 2012). Accordingly, a relationship between the lack of satisfied basic psychological needs and behaviors such as cyberloafing among students can be predicted. The present study was to find such a relationship.

Other variables such as conscientiousness and goal orientation have been also considered as the factors affecting cyberloafing according to the related literature (Prasad, Lim & Chen, 2010). Conscientiousness refers to the ability to have discipline and assume a responsibility (Barrick & Mount, 1991). People endowed with high degrees of conscientiousness are confident about their abilities and behaviors in meeting their long-term goals. In contrast, those individuals who are not conscientious are less able to control their own impulses (Costa & McCrae, 1992). Thus, it is predicted that conscientiousness should have a negative impact on the rate of cyberloafing among individuals.

A higher degree of goal orientation in people means more perseverance in terms of fulfilling goals, and spending more time and energy, and having a higher perception regarding the

achievement of the given goals. It is predicted that higher levels of goal orientation can reduce the rate of cyberloafing among individuals.

According to the existing studies in this domain, 89% of people on average spend a part of their work time cyberloafing every day (Conner, 2015). Up to 2013, this rate of cyberloafing by employees caused an annual loss of \$4500 per employee for organizations (Corgnet, Hernan-Gonzalez & McCarter, 2015). In this respect, cyberloafing is considered one of the most important aspects of this waste of work time. Similar situations can be predicted in Iran based on the steady advances in technology and communication technologies made across the world in recent decades (Sheikh, Atashgah & Adibzadegan, 2015).

Today's widespread availability of cyberspace for university students has lent the utmost importance to research studies in this domain. It should be noted that the consequences of harmful behaviors such as cyberloafing could lead to poor academic performance, neglect, and depression (Orsal, Orsal, Unsal & Ozalp, 2013; Woods, 2014; Mohammadbeigi & Mohammadsalehi, 2011).

According to the theoretical foundations and the available literature, this study sought to find a relationship between the variables of cyberloafing and psychological needs through the mediation of conscientiousness and goal orientation. The present study purposed to determine the share of each different aspect of these factors in predicting the component of cyberloafing among bachelor students at the University of Mazandaran in Iran. Accordingly, the research hypotheses were as follows:

1. Psychological needs can directly predict cyberloafing.
2. Psychological needs can indirectly predict cyberloafing through the variables of conscientiousness and goal orientation.

According to the given details, the initial model of this study had Glasser's basic psychological needs as independent variables, mastery goal-orientation and conscientiousness as mediators, and cyberloafing as dependent variable.

Method

This correlation study was designed to predict the cyberloafing of students in a path analysis model based on psychological needs and through the mediation of goal orientation and conscientiousness.

The statistical population of the study consisted of about 12,000 students from the University of Mazandaran during the 2016 academic year. Based on Morgan's table, 321 students were selected using the random sampling method. The Faculty of Humanities and Social Sciences at the University of Mazandaran was chosen for this study.

Ten classes were randomly selected from this faculty, and all students in those classes were evaluated. The cluster sampling method was used, because a list of all university students' names was not available to the researchers.

Instruments

Cyberloafing Questionnaire

The Cyberloafing Questionnaire was designed by [Doorn \(2011\)](#) and considers cyberloafing a multi-dimensional construct, measuring it in terms of four types of behavior (growth, recovery, diversion, and addiction) and three actions (social, informational, and entertainment). This questionnaire was comprised of a total of 22 items based on a five-point Likert-type scale (from almost never to almost always). The Cronbach's alpha coefficient of this questionnaire was equal to .77. The given questionnaire was also

normalized by the author, and its validity and reliability were reported as optimal for the evaluation of cyberloafing in a Persian-speaking population. In this study, Cronbach's alpha coefficient was used to determine the reliability and the coefficient, which was 0.80 for this scale. To assess the validity, the correlation of each question with the total score of the questionnaire was calculated. The results indicated that all questions had a significant correlation with the total score of the questionnaire ($p < .001$). Correlation coefficients varied between .33 and .67.

Sample Questions of the Cyberloafing Questionnaire

- 1- I use the Internet during class hours to maintain social networking.
- 2- I use the Internet during class hours to listen to music.
- 3- I use the Internet during class hours to play a game.
- 4- I use the Internet during class hours to search for information.
- 5- I use the Internet during class hours to follow the news.

William Glasser's Questionnaire of Basic Psychological Needs

William Glasser introduced basic psychological needs and highlighted five basic human needs which are internal, universal, dynamic and consistent with each other (Trigonaki, 2002). The given needs include survival, love/belonging, self-worth/empowerment, freedom, and fun/enjoyment (Glasser, 1999). Burns, Vance, Szadkierski & Stockwell (2006) designed a questionnaire based on Glasser's theory comprised of a total of 35 items in which the intensity of each component (needs) was measured by a seven-point Likert-type scale. The reliability

coefficient obtained through Cronbach's alpha in the present study was equal to .77 for the variable of basic psychological needs, and it was .78, .77, .78, .77, and .78 for need for survival, love/belonging, freedom, self-worth/empowerment, and fun/enjoyment, respectively, indicating an acceptable level of reliability. In order to evaluate the validity, the correlation of each question with the total score was calculated. The results showed significant correlation coefficients ($p < .001$), and the correlation coefficients for the five dimensions were from .34 to .52, .22 to .61, .41 to .63, .38 to .72, and .35 to .69, respectively.

Conscientiousness Questionnaire

The Short-Form Questionnaire of Big Five Personality Traits by McCrae and Costa was used to measure the dimension of conscientiousness. This tool had a total of 60 items, 12 of which were related to the dimension of conscientiousness and employed in this study. The subjects responded to items on this questionnaire based on a five-point Likert-type scale. The Cronbach's alpha reliability coefficient for the dimension of conscientiousness was .77, indicating an acceptable level of reliability. To assess the validity, the correlation of each question with the total score of the questionnaire was calculated. The results indicated that each questionnaire had a significant correlation with its total score ($p < .001$). These coefficients varied from .42 to .71.

Goal Orientation Questionnaire

The 18-item Goal Orientation Questionnaire designed by [Midgley et al. \(1998\)](#) was used in this study, and responses were based on a seven-point Likert-type scale. The overall Cronbach's alpha obtained in its final implementation was .87. The validity

scores of the sub-tests of mastery, performance-approach, and performance-avoidance goal orientation were .87, .84, and .76, respectively. It should be noted that only the mastery dimension of goal orientation was used in the present study. To determine the reliability of the mastery dimension, Cronbach's alpha coefficient was used, and the coefficient was .88. To assess the validity, the correlation of each question with this score was calculated. The results indicated that all questions had a significant correlation with the total score of the mastery dimension ($p < .001$). Correlation coefficients varied from .37 to .65.

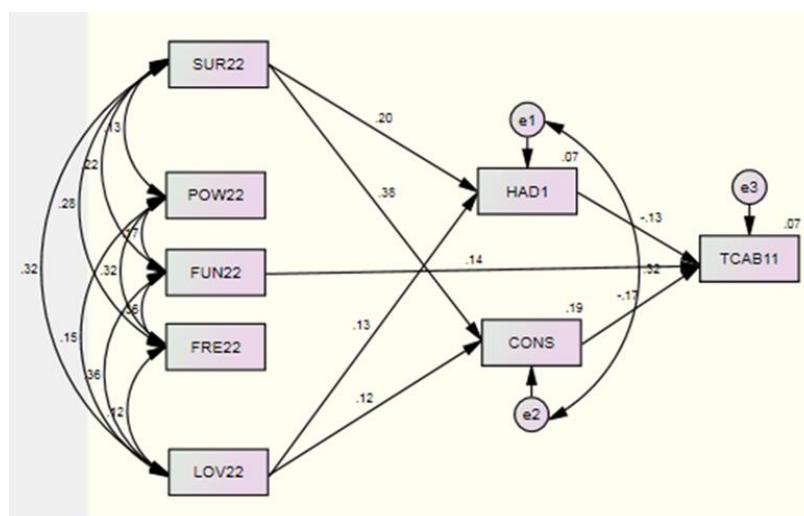
Results

The descriptive data of the research variables (including mean, standard deviation, minimum and maximum scores) were presented to conduct the statistical analysis in this study through descriptive statistics. Afterwards, path analysis was employed to test the research hypotheses and investigate the relationships between the variables of the model. SPSS-22 and AMOS-22 software were also employed for statistical analyses.

Based on the coefficients illustrated in Table 1, the variable need for survival had a significant and positive relationship with the variables need for love/belonging ($p < .001$, $r = .32$), need for freedom ($p < .001$, $r = .28$), need for fun/enjoyment ($p < .001$, $r = .22$), need for self-worth/empowerment ($p < .019$, $r = .13$), mastery goal orientation ($p < .001$, $r = .24$) and conscientiousness ($p < .001$, $r = .42$), but it was not significantly correlated with the variable cyberloafing. Furthermore, the variable need for love/belonging had a significant and positive relationship with the variables need for freedom ($p < .042$, $r = .12$), need for fun/enjoyment ($p < .001$, $r = .36$), need for self-worth/empowerment ($p < .001$, $r = .15$),

Predicting Cyberloafing through Psychological Needs with Conscientiousness

mastery goal orientation ($p<.001$, $r=.19$), and conscientiousness ($p<.001$, $r=.24$). Moreover, the variable need for freedom was significantly and positively correlated with the variables need for fun/enjoyment ($p<.001$, $r=.36$), need for self-worth/empowerment ($p<.001$, $r=.32$), mastery goal orientation ($p<.001$, $r=.15$), and conscientiousness ($p<.029$, $r=.12$). Similarly, the variable need for fun/enjoyment had a significant and positive relationship with the variables need for self-worth/empowerment ($p<.002$, $r=.17$), mastery goal orientation ($p<.031$, $r=.12$), and conscientiousness ($p<.001$, $r=.20$). Likewise, need for self-worth/empowerment was significantly and negatively correlated with cyberloafing ($p<.028$, $r=-.12$). Meanwhile, the variable mastery goal orientation had a significant and positive relationship with conscientiousness ($p<.001$, $r=.40$), but a significant and negative correlation with cyberloafing ($p<.002$, $r=-.18$). Finally, conscientiousness was significantly and negatively correlated with cyberloafing ($p<.001$, $r=-.20$).



Findings of the Proposed Model

Table1**Means, Standard Deviations, and Correlation Coefficients**

	components	mean	SD	1	2	3	4	5	6	7	8
1	Need for survival	3.88	.54		1						
2	Need for Love/Belonging	3.89	.68		.32	1					
3	Need for Freedom	4.03	.58		.28	.12	1				
4	Need for Fun	4.01	.57		.22	.36	.36	1			
5	Need for Power	3.45	.69		.13	.15	.32	.17	1		
6	Mastery Goal-Orientation	4.99	1.06		.24	.19	.15	.12	.03	1	
7	conscientiousness	3.78	.53		.42	.24	.12	.02	.01	.40	1
8	Cyberloafing	2.38	.55		-.04	-.01	.05	.09	-.12	-.18	-.20
											1

Prior to the evaluation of the model, the regression assumptions were investigated. Therefore, the p-p chart was used to examine the normal distribution of the residuals. Due to the location of all the points on the bisector of the first quarter, it was found that the data was endowed with a normal distribution. The indices of tolerance value and variance inflation factor were also used to investigate the collinearity of the predictor variables; the results obtained ranged from .757 and .882 for the index of tolerance values in different cases and between 1.17 and 1.32 for the variance inflation factor (VIF), which were acceptable due to the smaller value of this number than the cut-off point of 10. These indices indicated no collinearity between the predictor variables, and thus the obtained results were reported as reliable.

The path analysis in the AMOS-22 software was also employed for the evaluation of the proposed model following that compliance with the necessary assumptions was ensured; then the paths with insignificant statistical coefficients were removed to enhance the fit of the model. Figure 2 shows the path diagram and the coefficients obtained from the modified model.

According to the results of the path analysis (illustrated in Figure 2), need for survival was a positive and direct predictor of the variables mastery goal orientation ($p=.000$, $\beta=.20$) and conscientiousness ($p=.000$, $\beta=-.38$). Similarly, the variable need for belonging was a positive and direct predictor of the variables mastery goal orientation ($p=.028$, $\beta=.13$) and conscientiousness ($p=.024$, $\beta=.12$). Furthermore, the variables mastery goal orientation ($p=.033$, $\beta=-.13$) and conscientiousness ($p=.004$, $\beta=-.17$) were negative and direct predictors of need for fun/enjoyment ($p=.010$, $\beta=.14$), but positive and direct predictors of cyberloafing.

Fit Indices for the Model and Investigation of Research Hypotheses

As the data was entered into the AMOS-22 software, the fit of the model was investigated through fit indices, including the normalized chi-square index (the ratio of Chi-square to degrees of freedom), goodness of fit index (GFI), adjusted goodness of fit index (AGFI), comparative fit index (CFI), incremental fit index (IFI), and the root mean square error of approximation (RMSEA). Based on the results presented in Table 2, all the indices suggested the good fit of the given model.

Table 2
Fit indexes of Final Model

Fit index	Acceptable range	Value of the index	result
CMIN/DF	$\chi^2/DF < 3$	1.14	Confirmed
GFI	$GFI > .9$	.99	Confirmed
AGFI	$AGFI > .9$	.97	Confirmed
RMSEA	$RMSEA < .09$	.022	Confirmed
IFI	$IFI > .9$	.99	Confirmed
CFI	$CFI > .9$	.99	Confirmed

Considering the coefficients obtained from the model (shown in Table 3), the direct and indirect hypotheses are discussed.

Table 3
Standardized Coefficients of Direct, Indirect and Total Final Version

Effect	Independent variable	Dependent Variable		
		Mastery Goal-Orientaion	Conscientiousness	Cyberloafing
Direct Effect	Need for Survival	.20	.38	.....
	Need for Belonging/Love	.13	.12	.....
	Need for Fun	.....	.....	.14
	Mastery Goal-Orientation	.....	.....	-.13
	conscientiousness	.....	.....	-.17
	Need for	.....	.....	-.091

	Survival			
	Need for	.....	.....	-.037
	Belonging/Love			
	Need for	.20	.38	-.091
	Survival			
	Need for	.13	.12	-.037
	Belonging/Love			
	Need for Fun	.....	.....	.14
	Mastery Goal-	.....	.....	-.13
	Orientation			
	Conscientiousness	.....	.....	-.17
Total Effect				
	The coefficient of	.07	.19	.07
	determination			

Hypotheses associated with Direct Relationships between Research Variables

According to the results listed in Table 3, 1) the standardized path coefficient between need for survival and mastery goal orientation was .20, which was significant at the level of .008; hence, need for survival could increase mastery goal orientation; 2) the standardized path coefficient between need for survival and conscientiousness was .38, which was significant at the level of .010, and thus need for survival could result in increased conscientiousness; 3) the standardized path coefficient between need for belonging and mastery goal orientation was .13, which was significant at the level of .014, and therefore, need for belonging could enhance mastery goal orientation; 4) the standardized path coefficient between need for belonging and conscientiousness was .12, which was significant at the level of .032, and thus, need for belonging could directly affect the increase in conscientiousness; 5) the standardized path coefficient

between need for fun/enjoyment and cyberloafing was positive and significant ($p=.021$, $\beta=.14$), and thus, a rise in need for fun/enjoyment could increase cyberloafing; 6) the path coefficient between mastery goal orientation ($p=.025$, $\beta=-.13$) and conscientiousness ($p=.011$, $\beta=-.17$) and cyberloafing was significant and negative; hence, mastery goal orientation and conscientiousness could reduce the rate of cyberloafing.

Hypotheses related to Indirect Relationships between Research Variables

The repeated sampling method of “bootstrapping” with a confidence interval of 95% of sampling effect distribution was used to determine the indirect impacts (Shrout & Bolger, 2002). As seen in Table 3, the results of the significance test of the indirect effects suggested that need for survival ($p=.002$, $\beta=-.091$) and need for belonging ($p=.005$, $\beta=-.037$) could indirectly predict cyberloafing.

Investigating the Total Effects of Independent and Mediator Variables on Dependent Variables

An investigation into the total effects showed that the impact of need for survival as the independent variable on the variables mastery goal orientation ($p=.008$, $\beta=.20$) and conscientiousness ($p=.010$, $\beta=.38$) was positive and significant, but its effect on the variable cyberloafing was negative and significant ($p=.002$, $\beta=-.091$). The variable need for belonging also had a positive and significant effect on mastery goal orientation ($p=.014$, $\beta=.13$) and conscientiousness ($p=.032$, $\beta=.12$), but its effect on cyberloafing was negative and significant ($p=.005$, $\beta=-.037$). Moreover, the variable need for fun/enjoyment had a positive and significant impact on cyberloafing ($p=.021$, $\beta=.14$). Furthermore, mastery

goal orientation ($p=.025$, $\beta=-.13$) and conscientiousness ($p=.011$, $\beta=-.17$) could significantly and negatively affect cyberloafing.

Given the impact of independent variables on the dependent ones, 7% of the variance in cyberloafing, 7% of the variance in mastery goal orientation, and 19% of the variance in conscientiousness could be explained by the given model.

Discussion

To explain the results of the present study based on the theoretical issues and the related literature, the approval or rejection of the research hypotheses was discussed and investigated; then, some suggestions were offered following the delineation of theoretical and practical applications of this study. It must be noted that, due to the novelty of the subject being examined, the literature available on the matter was limited.

Based on the findings of this study, a significant and positive relationship was observed between need for fun/enjoyment and cyberloafing, which was consistent with the results of the studies of [Teo, Lim & Lai \(1999\)](#) and [Eastin et al. \(2007\)](#), who suggested a linear relationship between enjoyment seeking and the use of the Internet. In this regard, Glasser considered the need for fun/enjoyment as part of the human existence, a high level of which could lead to a feeling which could distract an individual from his duties for a while and involve him in activities known as fun ones. From this perspective, cyberloafing can be considered a consequence of this need, and one can have fun by spending time on virtual spaces.

The findings of this study also revealed that the need for survival could indirectly and negatively predict cyberloafing through the mediation of conscientiousness. These findings were, to some extent, in line with the results of a study conducted by

[Prasad, Lim & Chen \(2010\)](#) which indicated that the personality trait of conscientiousness was negatively correlated with cyberloafing. To justify the mediating role of conscientiousness, it was concluded that individuals with higher levels of need for survival were more likely to act conscientiously, and this issue would result in reduced rates of cyberloafing. Similarly, according to Glasser's theory, individuals feeling a greater need for survival within themselves could be more concerned with their life responsibilities and thus act with higher conscientious than others; consequently, this would lead to a reduced rate of cyberloafing.

Furthermore, the results of this study indicated that the variable need for survival could predict cyberloafing through mastery goal orientation. These findings were in agreement with the results of the study by [Prasad, et al. \(2010\)](#) which suggested that goal orientation could generally play the role of a deterrent mediator for cyberloafing. Based on these results. The higher the level of need for survival among individuals was perceived, the more the probability of higher mastery goal orientation could increase, and this could reduce the rate of cyberloafing behavior. It should be noted that no other studies have been conducted on the relationship between need for survival and cyberloafing, but these results could be logically explained as follows:

Individuals who feel a greater need for survival in accordance with Glasser's theory could have a higher perception of need for acquiring basic and necessary skills than others; thus, they could pay more attention to the acquisition of skills in educational and professional contexts, because their greater need for survival could prompt them to make greater efforts to overcome their concerns and reduce their need for survival. Therefore, the cyberloafing behaviors which can prevent people from acquiring

skills and gaining competence in education or work are less likely to occur.

The findings of the present study also demonstrated that the need for belonging could indirectly predict cyberloafing through conscientiousness orientation. These results indicated that the higher the level of need for belonging in individuals was perceived, the higher the probability of their conscientiousness was, and this could lower the rate of cyberloafing behavior. The mediating role of the variable conscientiousness for cyberloafing was explained earlier, but no previous studies, as mentioned, have investigated the relationship between need for belonging and cyberloafing from the perspective of William Glasser.

The results of the given analyses also revealed a significant and negative relationship between cyberloafing and the need for belonging through the mediation of goal orientation. These results indicated that individuals with higher levels of need for belonging were also endowed with higher mastery goal orientation, and this could lead to reduced levels of cyberloafing. The mediating role of the variable goal orientation for cyberloafing was also explained earlier, but to date, no research has investigated the relationship between the need for belonging and cyberloafing from the perspective of William Glasser.

Limitations & Suggestions

This study, like any other, had some limitations. Self-report assessment for sensitive subjects such as cyberloafing might be accompanied by possible bias, often so as to create a favorable social image, and this can affect the results. The researchers tried to reduce this effect by using anonymous questionnaires. Aside from that, caution should be taken in assessing the cause of the

results. Also, the effects of other variables such as socio-economic status should not be ignored.

The authors suggest that other researchers use the same model for different universities and workplaces in order to reach a more holistic and credible model predicting cyberloafing through psychological needs. Other mediators can also be used according to pertinent literature available on the subject. It is also suggested that in future research, the role of variables such as socioeconomic status of individuals as moderating variables be considered.

Acknowledgments

We sincerely thank all those who participated in this study and helped in facilitating the research process, especially the students of the University of Mazandaran who helped us gather the required information.

References

Askew, K., Buckner, J. E., Taing, M. U., & et al. (2014). Explaining cyberloafing: The role of the theory of planned behavior. *Computers in Human Behavior*, 36, 510-519.

Bandura, A. (1986). Social foundations of thought and action: A social cognitive theory, Prentice-Hall, Englewood Cliffs, NJ.

Bandura, A. (2004). *Social cognitive, theory of self- regulation. Organizational behavior and high performance*, 150, 284-297.

Barrick, M. R., & Mount, M. K. (1991). The big five personality dimensions and job performance: a meta-analysis. *Personnel Psychology*, 44(1), 1-26.

Belk, R. (2014). You are what you can access: Sharing and collaborative consumption online. *Journal of Business Research*, 67(8), 1595-1600.

Burns, M. K., Vance, D., Szadokierski, I., & Stockwell, C. (2006). Student Needs Survey: A Psychometrically Sound Measure of the Five Basic Needs. *International Journal of Reality Therapy*, 25(2).

Conner, C. (2015). Forbes Welcome. Retrieved from <http://www.forbes.com/sites/cherylsnappconner>.

Costa, P. T., & McCrae, R. R. (1992). Normal personality assessment in clinical practice: The NEO Personality Inventory. *Psychological Assessment*, 4(1), 5.

Cornet, B., Hernán-González, R., & McCarter, M. W. (2015). The Role of the Decision-Making Regime on Cooperation in a Workgroup Social Dilemma: An Examination of Cyberloafing. *Games*, 6(4), 588-603.

Doorn, O. V. (2011). *Cyberloafing: A multi-dimensional construct placed in a theoretical framework*. Eindhoven University of Technology. (Published master thesis).

Eastin, M., Glynn, C., & Griffiths. (2007). Psychology of communication technology use in the workplace. *CyberPsychology and Behavior*, 10, 436–443.

Elwell, J. S. (2016). The transmediated self Life between the digital and the analog. *Journal of Creative Communications*, 1(11), 102-118.

Frey, L. M., & Wilhite, K. (2005). Our Five Basic Needs: Application for Understanding the Function of Behavior. *Intervention in School and Clinic*. 40(3), 156–160.

Glasser, W. (1999). *Choice theory: A new psychology of personal freedom*. HarperPerennial.

Goldberg, L. R. (1992). The development of markers for the Big-Five factor structure. *Psychological Assessment, 4*(1), 26-42.

Lim, K. G., & Chen, J. Q. (2012). Cyberloafing at the workplace: gain or drain on work? *Behaviour & Information Technology, 31*(4), 343-353.

Midgley, C., Kaplan, A., Middleton, M., & et al. (1998). The development and validation of scales assessing students' achievement goal orientations. *Contemporary Educational Psychology, 23*(2), 113-131.

Mishler, J. A., & Cherry, S. (1999). *Correlating Glasser's Choice Theory to the Behavioral Requirements of IDEA: Rural Special Education for the New Millennium*. Conference Proceedings of the American Council on Rural Special Education (ACRES) (19th, Albuquerque, New Mexico, March 25-27, 1999).

Mohammadbeigi, A., & Mohammadsalehi, N. (2011). Prevalence of internet addiction and related risk factors in students. *Journal of Guilan University of Medical Sciences, 20*, 41-48.

Orsal, O., Orsal, O., Unsal, A., & Ozalp, S. S. (2013). Evaluation of internet addiction and depression among university students. *Procedia-Social and Behavioral Sciences, 82*, 445-454.

Piowtroski, C. (2013). Cyberloafing: A Content Analysis of the Emerging Literature. *Journal of Instructional Psychology, 39*(4), 259-261.

Prasad, S., Lim, V. K., & Chen, D. J. (2010). Self-regulation, individual characteristics and cyberloafing. *Self, 1*(1).

Seymour, L., & Nadasen, K. (2007). Web access for IT staff: a developing world perspective on web abuse, *The Electronic Library, 25*(5), 543 – 557.

Sheikh, A., Atashgah, M. S., & Adibzadegan, M. (2015). The antecedents of cyberloafing: A case study in an Iranian copper industry. *Computers in Human Behavior*, 51, 172-179.

Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and nonexperimental studies: New procedures and recommendations. *Psychological Methods*, 7(4), 422-445.

Strishko, G. (1997). The Reality of Experience. *AEE International Conference Proceedings*, 227-236.

Teo, T. S., Lim, V. K., & Lai, R. Y. (1999). Intrinsic and extrinsic motivation in Internet usage. *Omega*, 27(1), 25-37.

Trigonaki, N. (2002). Parents of Children with Autism and Five Basic Needs. *International Journal of Reality Therapy*, 56, (2).

Turkdogan, T., & Duru, E. (2012). The Role of Basic Needs Fulfillment in Prediction of Subjective Well-Being among University Students. *Educational Sciences: Theory & Practice*, 12(4), 2441- 2446.

Vitak, J., Crouse, J., & LaRose, R. (2011). Personal Internet use at work: Understanding cyberslacking. *Computers in Human Behaviour*, 27, 1751-1759.

Woods, F. (2014). *A Study into the Relationship between Cyberloafing, Procrastination and Conscientiousness in the Workplace*. Submitted in partial fulfilment of the requirements of the Higher Diploma in Psychology at DBS School of Arts, Dublin.

Yilmaz, F. G., Yilmaz, R., Ozturk, H., & Sezer, B. (2015). Cyberloafing as a barrier to the successful integration of information and communication technologies into teaching and learning environments. *Computers in Human Behavior* 45, 290-298.