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## **A Study on Relationship and Cluster Analysis among Internet Dependency, Social Isolation and Personality**

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### **ABSTRACT**

There has been a new slogan in the 21<sup>st</sup> century where all are shouting with the one in chorus: 'data is the new oil'. As we cannot imagine a single day survival without energy like crude oil, life in this decade is getting excessively depended on data consumption. Naturally, internet dependency and growing social isolation have become an unarticulated truth that needs to be properly addressed. Present study deals with comparisons among different psychological aspects of university level learners. Correlations among different variables viz. Internet Dependency, Social Isolation and five different factors of Personality are studied. Two groups like science and arts streams are considered for this study. Although there are negligible and mediocre relationships are found among these aforesaid variables but three clusters are formed.

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Keywords: Internet Dependency, Social Isolation, Personality Traits, PG Level Students and Cluster Analysis

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### **1. Introduction**

In the last two decades, rapid expansions of cable and fibre optical have seen a vertical up-rise in the all circumference of the globe. In this last decade, we have moved from 2G network to 3G, from 3G to 4G and 5G and so on. This excessive data consumption has mostly swept away the school and college goers. Internet use is a growing trend in modern society and its excessive use can affect the psychological well-being of people and create social problems (Whang and Chang 2003; Widyanto, 2007). Online teaching and learning platforms are rapidly belling their strong presence. One 'click' to 'accept' and 'proceed' decides our online presence and participations. These 'occupied niches' and 'online presence' ease our life in many ways. Anything that eases our life and gives us opportunities may not be the bliss in the full consideration of the fact. Long and strong presence in internet has its manifold perils as well. One can become the cyber preys. Long and incessant data consumption may result into cyber addiction which may passively grow as social isolation. Psychological dependence and different physiological problems are studied by different researchers ((Kendell, 1998; Orzark, 1999; Yen, et al. 2007; Morrison and Gore, 2010; Yao and Zhong, 2014; Niemz et al. 2005; Kelley and Gruber, 2013; Kuss, et al., 2014; Zimbra et al., 2010).

The rising scale of internet penetration irrespective of all sections of people has become a growing concern for the social scientists. Internet use and data consumption is not altogether detrimental. It eases our life. It enables us to access many remote educational resources. Reasonably, juvenile participation is very common. Learners of different age groups use internet and online educational resources on multiple platforms. We cannot eliminate the personality construct of the internet user. It is the personality construct that configures the person and its character, its dreams, wishes, habits and activities. Psychologists are well aware of the relationship between personal characteristics and internet use (Tosun and Lajunen, 2010). An internet user with the healthy personality construct has dream that drives him/her to access internet for the welfare of his/her career. Persons with neurotic personality trait mostly remain morbid and obsessed. He has no dream to pursue, no wish to meet. Quite expectedly, the internet user with neurotic personality trait has the tendency to become internet addict. Studies show that excess of internet usage with unhealthy mental health can result into cyber addiction, which invites

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social isolation. Swickert et al. (2002) determined the relationship between personality with the five-factor model and online activity. Personality trait has emerged as significant factor in the study internet dependency and growing social isolation. Different aspects of personality and psychology are studied by several researchers (Muscanell and Guadagno, 2011; Ross et al., 2009). Internet use is never bad if it remains within monitoring limit as this opens the window of unlimited knowledge as well as opportunities. The moment it reaches to the extremity the internet use renders into a curse in the form of social isolation, which articulates the growing distance between a person and his/her social participation. The more the internet usage strongly invades the psychic landscape of user the more the subject (internet user) withdraws itself from social participation. Correlation between social isolation and Internet addiction was studied by several researchers (Seif et al., 2014; Izanloo and Goudarzi, 2011; Tiwari and Ruhela, 2012; Malviya et al., 2014; Goel, et al., 2013; Akhter, 2013; Taylor et al., 1979; Thoits, 1995; Cohen et al. 1997; Pressman et. al. 2005; Hawkey et. al. 2003; Heikkinen and Kauppinen, 2004; Wilson et al. 2007; Steptoe et al. 2004; Hawkey et al. 2003; Cardak, 2013; Askarizadeh et al. 2015).

## 2. Objectives of the Study

For the smooth conduction of present study, the researchers have formed the following objectives

- i. To find out the relationships among Internet Dependency, Social Isolation and big five different factors of Personality viz. Extraversion, Agreeableness, Conscientiousness, Neuroticism and Openness for two groups of university level learners.
- ii. To marshal the responses of each variable like Internet Dependency, Social Isolation and Personality Traits.
- iii. To form the clusters on the basis of the responses collected during the course of the study.

## 3. Sample

The investigators of the present study have randomly selected 250 PG students from arts and science streams from Sidho-Kanho-Birsha University, West Bengal.

## 4. Tools

The title of the study indicates that the study deals with three variables like internet dependency, social isolation and personality traits. Keeping all these possible dimensions of the variables in mind, the investigator has used the following tools for the collection of data:

- i. Internet Dependency Scale (IDS) by Mahanti et al. (2016)
- ii. Social Isolation Scale (SIS) by Gorain et al. (2018)
- iii. Big Five Inventory of Personality (BFI) by John et al. (1991)

## 5. Method

A descriptive survey type research method is applied for the present study.

## 6. Statistical Technique

A study of correlation is done by Product Moment method and Two-Way Cluster Analysis is applied to determine different clusters.

## 7. Results and Discussion

Table 1. Correlation coefficients between different variables of 250 learners

	IDS	SIS	BFI	Extraversion	Agreeableness	Conscientiousness	Neuroticism	Openness
IDS	1	0.341	-0.19	-0.179	-0.3	-0.345	0.343	0.025
SIS	0.341	1	-0.336	-0.385	-0.296	-0.361	0.417	-0.145
BFI	-0.19	-0.336	1	0.637	0.518	0.609	-0.053	0.65
Extraversion	-0.179	-0.385	0.637	1	0.291	0.324	-0.28	0.31
Agreeableness	-0.3	-0.296	0.518	0.291	1	0.28	-0.333	0.154
Conscientiousness	-0.345	-0.361	0.609	0.324	0.28	1	-0.475	0.25
Neuroticism	0.343	0.417	-0.053	-0.28	-0.333	-0.475	1	-0.109
Openness	0.025	-0.145	0.31	0.31	0.154	0.25	-0.109	1

Table 2. Correlation coefficients between different variables of 190 arts learners

	IDS	SIS	BFI	EXTRA	AGREE	CONSC	NEURO	OPEN
IDS	1	0.373	-0.161	-0.178	-0.328	-0.312	0.37	0.069
SIS	0.373	1	-0.353	-0.405	-0.342	-0.365	0.419	-0.106
BFI	-0.161	-0.353	1	0.651	0.563	0.606	-0.09	0.638
EXTRA	-0.178	-0.405	0.651	1	0.342	0.318	-0.267	0.297
AGREE	-0.328	-0.342	0.563	0.342	1	0.313	-0.345	0.161
CONSC	-0.312	-0.365	0.606	0.318	0.313	1	-0.501	0.236
NEURO	0.37	0.419	-0.09	-0.267	-0.345	-0.501	1	-0.134
OPEN	0.069	-0.106	0.638	0.297	0.161	0.236	-0.134	1

Table 3. Correlation coefficients between different variables of 60 science learners

	IDS	SIS	BFI	EXTRA	AGREE	CONSC	NEURO	OPEN
IDS	1	.260	-.291	-0.188	-0.175	-.455	.308	-0.18
SIS	.260	1	-.286	-.305	-0.057	-.372	.392	-.338
BFI	-.291	-.286	1	.578	.275	.619	0.072	.726
EXTRA	-0.188	-.305	.578	1	0.034	.353	-.338	.375
AGREE	-0.175	-0.057	.275	0.034	1	0.124	-.296	0.111
CONSC	-.455	-.372	.619	.353	0.124	1	-.417	.322
NEURO	.308	.392	0.072	-.338	-.296	-.417	1	0.004
OPEN	-0.18	-.338	.726	.375	0.111	.322	0.004	1

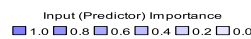
Coefficients of correlation of total learners, arts learners and science learners are represented by Table 1, Table 2 and Table 3 respectively. It is found that there exists a low and positive correlation between Internet Dependency and Social Isolation.

It is also found that there are low and negative relationship between Internet Dependency and BFI, very low and negative or negligible relationship between Internet Dependency and Extraversion, very low and negative or negligible relationship between Internet Dependency and Agreeableness, Moderate and negative relationship between Internet Dependency and Conscientiousness, low and positive relationship between Internet Dependency and Neuroticism, very low and negative or negligible relationship between Internet Dependency and Openness.

There are low and negative relationship between Social Isolation and BFI, low and negative relationship between Social Isolation and Extraversion, very low and negative or negligible relationship between Social Isolation and Agreeableness, low and negative relationship between Social Isolation and Conscientiousness, low and positive relationship between Social Isolation and Neuroticism, low and negative relationship between Social Isolation and Openness.

On the other hand, BFI shows moderate and positive relationship with its components except Agreeableness and Neuroticism. Relationship shown by the learners between BFI and Agreeableness is low and positive and BFI and Neuroticism is very low and positive or negligible.

Clusters



Cluster	3	2	1
Label			
Description			
Size	40.4% (101)	35.6% (89)	24.0% (60)
Inputs	stream ARTS (100.0%)	stream ARTS (100.0%)	stream SCI (100.0%)
	sex M (100.0%)	sex F (100.0%)	sex F (55.0%)
	IAS 124.91	IAS 115.49	IAS 127.78
	NEURO 21.60	NEURO 22.55	NEURO 21.03
	SIS 103.82	SIS 107.49	SIS 102.77
	EXTRA 22.47	EXTRA 23.29	EXTRA 22.82
	CONSC 31.56	CONSC 30.55	CONSC 30.47
	AGREE 29.87	AGREE 30.76	AGREE 30.25
OPEN 32.82	OPEN 32.91	OPEN 32.95	

By two step cluster analysis using the variables Internet Dependency, Social Isolation, Extraversion, Agreeableness, Conscientiousness, Neuroticism and Openness, it is interesting to observe that three clusters are formed. First cluster formed by the male learners of Arts, second cluster is formed by female learners of Arts and third cluster is formed by the Science learners. So, using above mentioned variables male and female learners of Arts can be put into two different groups. All the science learners irrespective of sex form a separate group.

## 8. Conclusion

Relationships among the variables Internet Dependency, Social Isolation and five different factors of personality viz. Extraversion, Agreeableness, Conscientiousness, Neuroticism and Openness for arts, science and total learners of arts and science are studied keeping the aforesaid objectives in mind. Relationships between each pair of variables are either quite low or mediocre. Interestingly, three clusters are formed. Male learners of arts and female learners of arts formed two different clusters but science learners formed a different cluster.

## 9. Conflict of Interest:

No conflict of interest to be declared.

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