SOCIAL MEDIA ADDICTION OF EMPLOYEES: DOES IT AFFECT LABOR SUPPLY?

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Abstract

The main objective of this research is to identify the impact of social media addiction on the labour supply of employees in Sri Lanka. The study covers 390 employees through a questionnaire survey. The study used the endogenous switching regression model for modelling average working hours per week day of social media addicts and non-addicts comparatively. Age, marital status, executive employment, type of social media and commuting distance to the workplace are the key factors associated with social media addiction of workers as in the selection function of the model. Working hours of social media addicts are affected by age, gender and executive employment while the working hours of non addicts are mainly affected by gender, marriage, executive employment, years of education and monthly net salary. Social media addiction of non addicts causes reduction of average hours of work per week day, while hours of work of social media addicts increase, if they have given up social media addiction. Institution specific policy insights are also proposed to increase the performance of employees.

Keywords*: Social Media Addiction, Employee Performances, Neoclassical Labour Leisure Model, Labour Supply*

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INTRODUCTION

Social media is a technological innovation that facilitates creativity, interaction and interoperability among online users (Berthon et al., 2012 in Okazaki and Taylor, 2013, p.56). It creates computer-generated platform to keep social relationships of employees allowing for a construction of public or semi-public profiles of users, viewing and sharing lists of user connections that allows to make new friends (Boyd and Ellison, 2008 in Aguenza et al., 2012, p.22; Balasuriya, 2015; Kietzmann et al.,2011). This creates three types of modifications in traditional computer-based communications including shifting desktop activities on to the web activities, shifting the value production of the firm on to the consumer and shifting the power of the firm on to the consumers (Berthon et al., 2012 in Okazaki and Taylor, 2013, p.56). Collaborative projects, blogs, user-generated content communities, social networking sites, virtual game worlds and virtual social worlds are classified as main components of social media, according to Kaplan and Haenlein (2010). Three types of social networking are further classified by Golder et.al (2007 in Kandiero et al., 2014, p.25) as 'free-for-all' social websites, professional websites and industry-specific websites.

Social media usage has been increasing rapidly in the world and people spend over 700 billion minutes per month on social media, according to Crescenzo (2009 in Kandiero et al, 2014, p.26-27). Worldwide social media sites further show that the most popular social media site is Facebook which started in 2004, followed by Pinterest and Twitter (Star counter, 2019). Facebook had 1.2 million users in 2006 and that has increased up to 21 million in 2007 (Needham and Company as cited in Spitzberg, 2006 in Ross et al., 2009, 578). It had 845 million users in 2012 globally recording the highest users from Europe (223 million users) while Asia comes the second (184 million) (Fach, 2012, in Aguenza et al., 2012, p.22-23).

Females have more tendencies for keeping Facebook accounts than men. Nearly half of the Facebook users (425 million users) are connected to the sites through their mobile phones and each of them have spent 20 minutes per visit in a Facebook site (Fach, 2012, in Aguenza et al., 2012, p.22-23). According to Nielsen (2010) social media accounts for one-quarter of internet activities in the world (in Aguenza et al, 2012, p.22-23). Percentage of using social media at least once a week is 55 among employees as revealed by Greenwald,2009 and Deloitte,2009 (in Aguenza et al., 2012, p.22). Over 80 million professionals in the world are using LinkedIn accounts (in Aguenza et al, 2012, p.22-23). 94 percent of undergraduates use social media to keep social ties as found by Ellison and colleagues (2007 in Ross et al, 2009). Not only the supply side of labor but also the firms use social media for different purposes such as promoting their brands. Twitter is popular among companies rather than Facebook (Barnes et al., 2012, in Okazaki and Taylor, 2013, p. 56). However, social media tendencies in the world have been diversifying rapidly in line with the rapid improvements in the sector of information technology.

Sri Lanka shows a higher tendency on social media usage while Facebook, LinkedIn and YouTube are the most popularly used social networking sites among IT professionals (Balasuriya, 2015). According to Rathnathilaka et al (2016), social network sites are accessed by more than half of the government workers (58 percent) in Sri Lanka more than once a day while 89.6 percent of them are using social media sites at least once a day. They spend more than one hour on social media sites per day at office on average (69.83 minutes) while female workers have more tendency for using social media (79.66 minutes) than men (60.48 minutes). The time difference of social media usage at office and at home is recorded as 3.32 minutes, indicating that a considerable proportion of government workers are using social media at work. They spent more than one hour at office on social media sites while spending only half an hour on official requirements of the job. The study further highlighted that approximately 46 minutes were wasted by a government employee in Sri Lanka for using social media at work for non-official tasks per day. Nearly two thirds of them use social media for the purposes of maintaining communications with friends (Rathnathilaka et al., 2016) and that is included as a part of their leisure activities. This creates controversies with the classical theories in labour economics.

The neo classical labour leisure model which presents the initial labour market decision making of an individual, basically allocates two-time utilities as labour and leisure as a very clear division. When the hours of work increase, the hours of leisure reduce accordingly (Kaufman, 1989). This substitution is clearly visible if the individuals enjoy only the physical leisure activities from outside of their workplace. However, when social media comes in as a virtual leisure activity during work, the basic concept of the neoclassical labour leisure model is challenged since this supports the workers to engage in personal activities while at work.

The extensions of neoclassical labour leisure models up to household models of labour supply include three-time utilities as market, non-market and leisure activities (Kaufman, 1989). Social media further affects the time allocation for non-market work. Simultaneously, there is a structural change in leisure activities by substituting physical leisure activities into social or virtual leisure activities. According to Kreiner (2006), social media bridges the boundaries of work and home, and this could affect the productivity of workers either positively or negatively. Since social media improves networking and reduces work stress that would lead to an enhancement of labour supply (Aguenza and Som, 2012; Fahmy, 2009) it also has the possibility to create negative impacts through reducing real working time (Peacock, 2008; Gaudian, 2009; Soron and Tarafd, 2015). However, the opinion of 38 percent of the employers towards social media is negative regarding their workers.

In line with the increasing global usage of social media, the Sri Lankan usage trend has also been increasing rapidly. While 5.5 million Sri Lankans have Facebook accounts according to Internet world stats (2018), computer literacy among people in the age group

of 5-69 is 29 percent while Digital literacy[1] is 42.4 percent according to a Sri Lanka Labour Force Survey (2018). Digital literacy among youth in the age group of 15-29 is relatively very high than the average level. Digital literacy of the age groups of 15-19, 20-24 and 25-29 are 73.9, 77.6 and 68.9 percent respectively while the percentages are relatively lower for older people (Table 1).

Table 1: Computer and Digital Literacy Rates by Age Groups – 2018

Age	Computer Literacy Rate	Digital Literacy Rate
5-9	12.4	24
10-14	39.5	50.1
15-19	60.8	73.9
20-24	58.7	77.6
25-29	47.9	68.9
30-34	37.5	58
35-39	27.5	47.3
40-49	20.9	35.9
50-59	11.7	20.3
60-69	6.1	10.1

Source: LFS, 2018, p.56

Hence, the problem of using social media at work would be a considerable issue in the productivity of employees, especially among the youth who are highly sensitive to the digital world at present and the situation would be severe in future with new birth cohorts. Therefore, the future labour market which deals with the digital world will face different challenges in assessing the productivity and performances of workers due to the impossibility of identifying actual hours of work under social media addiction.

The main objective of this research is to identify the impact of social media addiction on labour supply (average hours of work per week day) of workers in Sri Lanka. There are two specific objectives. The first is to make a comparison of labour supply differences between social media addicts and non-addicts, while simultaneously identifying the key factors associated with social media addiction. Secondly, the study seeks the responsiveness of predicted labour supply conditional to social media addiction (constrained to the switching behaviour of employees from social media addiction to non-addiction vs. non-addiction to addiction).

[1] "Digital literacy is defined if a person could use a computer, lap top, tablet or smartphone on his/her own. Digital literacy rate calculates as a proportion of above group as a percentage to the total population, (aged 5 – 69 years) of the country (LFS, 2018, p.54)."

LITERATURE REVIEW

Social Media Addiction in Economics

Marshall (1920) is the first economist who worked on habit or addiction in the economic aspects based on the taste for "good" music (Marshall, 1920; Stigler and Becker, 1977 in Cawley and Ruhm, 2012, p. 112). In this aspect, the utility function of the individual includes both current consumption and stock of past consumption. Three basic dimensions of addiction were identified by Marshall. The first, Reinforcement means that the marginal utility of current consumption increases with past consumption stock, which is called adjacent complementarity. The second is Tolerance, which indicates that stock of Past consumption reduces utility. It assumes that addiction is harmful. The third characteristic is Withdrawal, which indicates a positive marginal utility of current consumption (Cawley and Ruhm, 2012).

However, generally economic models of addiction can be divided into three basic categories: imperfectly rational models of addictive behaviour, models of myopic addictive behaviour, and models of rational addictive behaviour. Elster (1979); McKenzie (1979); Winston (1980), and Schelling (1978, 1980, 1984a, b in Chaloupka et al., 2003, p.74) are some economists who developed the imperfectly rational models of addictive behaviour assuming stable preferences with inconsistent short-run and long-run preferences. According to the Myopic Addiction Models, the individuals identify that their current active consumption is dependent on past consumption. However, when making the decision on current consumption, they neglect the impact of the current and past consumption on future consumption. Further, most of the economists who developed the Myopic Addiction Models assume that preference is endogenous and it changes according to the past consumption over time. Under the models of rational addictive behaviour, an important theory was developed by Becker and Murphy's (1988) called a theory of Rational Addiction. According to them, harmful addiction is a consequence of two different processes, "tolerance" and "reinforcement". Further, addictive consumption is "adjacent complementarity" due to reinforcement, indicating the amount of addiction goods consumed at different time periods is complement.

As a result, the current consumption of an addictive good is inversely related to its current price, past and future prices. In their model, the ratio of the long-run to short-run price effect increases as the degree of addiction increases. Also, they assume that utility depends on the current consumption and past consumption of the addictive good, and also the current consumption of all other goods. When considering the Determinants of social media addiction of individuals and its impact on employee productivity, determinants can generally be categorized into three categories such as, Demographic factors, Social factors and Economic factors.

Among the demographic factors, age is a significant predictor of peoples' motivations to use social media. The study done by Leung (2013) has identified a positive relationship

between age and internet addiction. Moqbe (2012); Leftheriotis and Giannakos (2014); Charoensukmongkol (2014); Lumumba (2017); Eliringia (2017); Krishnan Nair (2017); Mugaza (2018); Morah (2018) and Shava and Chinyamurind (2018) recorded that a higher proportion of individuals within 21-35 years have mostly used various social media platforms. Andreassen et al (2014) concluded that there is a negative relationship between age and attitudes about personal uses of social network sites at work. This is in line with Skeels & Grudin, (2009) who identified that the use of Facebook or Myspace decreases with age and employees who are in the age group of 26-45 recorded the highest usage in social media. However, Wu et al (2013) and Alahmad et al (2018) identified that there is no statistically significant impact of age on social media usage. In the Sri Lankan context, Warnakula and Manickam (2010), Balasuriya and Jayalal (2015) and Senanayake and Senanayake (2016) identified that individuals who are in the young age group have mostly used social media for their personal and professional uses.

According to empirical evidence, most of the studies identified females as being more interested in the use of social media networks and spend more time than males (Acquisti and Gross, 2006; Lenhart, 2009; Thompson and Lougheed, 2012). This is in line with Charoensukmongkol (2014); Mwituria (2015); Weru (2015); Senanayake and Senanayake (2016); Lumumba (2017); Shava and Chinyamurind (2018) who explained that a higher proportion of females use and are addicted to social media than males. Similarly, different behaviours can also be identified based on the gender. For example, females use social media networks for social connections and for posting photographs while male use it for forming new relationships, learning and social identity gratifications (Joinson, 2008; Barker, 2009 and Muscanell and Guadagno, 2012). Similarly, Shabir et al (2014) also explained that females use social media networks for "relaxation" more than the males, whereas males use it for motives of "control" and "inclusion". On the other hand, according to Soron and Tarafder (2015) males access social media at their workplaces while females use it during their leisure time. However, some studies have found that males are more addicted to social media (Moqbel, 2012; Leftheriotis and Giannakos, 2014; Eliringia, 2017 and Morah, 2018). Further, the studies done by Garrett and Danziger, 2008b; Henle, et al., 2009; Lim and Chen, 2009; Vitak, et al., 2011) identified males using social network sites during working hours than did females (in Andreassen et al, 2014, p.916). In the Sri Lankan context, Waranakula and Manickam, (2010) and Rathnayake and Rathnayake (2017) also identified that males are more addicted to social media than females.

Social media addiction can be determined by the marital status of the users. According to Soron and Tarafder (2015), unmarried people are more addicted to Facebook than married people. Further, they identified that the purpose of the use of social media varies with the marital status, indicating that married people use Facebook to connect with friends, upload photos and for news, while unmarried people use it for entertainment purposes such as playing online games and sharing academic information. Andreassen et al., (2014)

also found a positive relationship between marriage and attitudes about the personal use of social media at the workplace. However, Wu et al., (2013) found that marital status has no significant impacts on addiction to social networking sites.

When it comes to empirical evidence from past studies on the relationship between education and social media addiction, Andreassen et al (2014) have identified that educational level was positively related to the use of social network sites for personal purposes during working hours. This finding emphasized that people with higher socio-economic status are less bothered about losing their jobs or they pay more attention to maintain their social relationships for career development than those with lower socio-economic status. Further, Leung (2013) also concludes that there is a positive relationship between education and internet addiction. In the local context Rathnathilaka et al (2016) identified that education is not a significant factor to determine social media addiction or possession of a social media site account. However, Rathnayake and Rathnayake (2017) insist that the education levels have some impact on Facebook addiction.

Some researchers have attempted to reveal the relationship between social media addiction and economic factors such as occupation and income level of individuals. Wu et al., (2013) identified a significant impact of work status on addiction to social networking sites. Further, according to Anderson et al., (2014) both middle and top-level managers have positive attitudes about the use of social media for personal purposes at work than the employees who do not involve with managerial functions, because top level managers engage in more regular personal Internet use at work when compared to other employees. However, by contrast Hilts (2008) and Rathnathilaka et al., (2016) identified that there is no significant relationships between occupation and the use of social media. Considering the relationship between income level and social media usage, Rathnayake and Rathnayake (2017) identified that there is an impact on income on Facebook addiction. The commuting distance to the workplace has been identified by Lachmann et al (2017) as another factor associated with internet addiction.

Based on the above studies, the age, gender, marital status, education, occupation characteristics, income and commuting distance will be used to identify the factors associated with social media addiction in the selection function.

Social Media Usage at Work and Employee Performances

While considering social media at workplace, many researchers have identified both the negative and positive aspects of social media at the workplace. Regarding the positive aspects, Fahmy (2009) shows that employees who do not use social media sites are 9% less productive than those who use social media sites (in Aguenza et al., 2012, p. 23). SNSs reduce the contact time of co-workers by cutting down unnecessary emails and instant messages among them and decrease the time spent on particular job tasks (in Rathnathilaka et al, 2016 p. 8). Further, it will help preserve stronger bonds among co-workers by enhancing the friendly work environment and it also indirectly leads towards

enhancing both job satisfaction and productivity (Diercksen et al, 2013; Mason, 2014; Steinfield et al., 2009 and Ichniowski and Shaw, 2005). Further Bennett, et al (2010) concluded that social networking tools enhance business benefits including morale, enhanced collective knowledge, increased productivity, and sharpened strategic focus and greater innovation. On the other hand Munene and Nyaribo (2013) pointed out employee social media participation develop informal learning, creation and sharing of knowledge, retention of organizational knowledge in searchable formats, effective use of computer aided communication technologies and innovations which leads to enhance the productivity of employees (as cited in Weru ,2105, p. 10). Furthermore, employees' knowledge, abilities, motivational levels and close association with the organization are increased by the social networking which leads employees' performance (Flynn, 2011). Moqbel et al (2013), Charoensukmongkol (2014) and König et al., (2014) have identified social media as an enabling tool that recovers from stress and stimulates the social connections that support the employees' work and manage the work life balance (in Chauhan, 2015 p.8). According to North (2010), Leidner et al (2010) and Moqbel et al (2013) employees have identified perceived social networking sites as being beneficial to their productivity (in Chauhan, 2015 p. 37).

Weru (2015) identified that employees' job performances were positively affected by social media by facilitating them to perform more efficiently at their work, support the organizing of special events at work and enhancing the connections with people who have similar skills and interests at work. This is in line with Brzozowski (2009), Steinfield et al., (2009), Dutta(2010), Leidner et al (2010), Subramaniam et al., (2013) and Kane (2015) who emphasized that social media improves communication and collaboration and connecting with expertise and enhances the knowledge sharing of digital content (in Chauhan, 2015 p. 37) Similarly, this also corroborates Kandiero et al., (2014) findings that indicated that workplace productivity is increased by enhancing the communication and collaboration of employees which helps in knowledge transfer.

Even though social media plays a key role in the modern workplace in the aspect of communication, marketing and recruiting new employees etc. social media usage may also lead to negative workplace outcomes. For example, due to social media addiction, about 70 percent of the internet usage at their workplace is not related to their job tasks (Michael, 2017 in Choi et al, 2019, p.249). According to Diercksen et al., (2013) more than half of the employees use social networks for their personal matters during working hours, thus incurring a cost of more than $ 2.25 billion to the firm due to wasted time. This finding is confirmed by Gaille, 2017 in Choi et al., 2019, p. 249 indicating that if one thousand employees spend one hour on social media networks per day, then the annual loss to the organization could be $ 35 million in the USA. Nucleus (2009); Rooksby, et al., (2009) and Accountemps (2010) also concluded that the use of social media networks hinder productivity (in Weru 2105, p. 6). According to Denyer et al., (2011) and Kane (2015) social media can adversely affect employees due to the negative

ties and relationship. Further, Labianca & Brass (2006) and Kane (2015) identified that even though those adverse relationships represent a very small proportion of all organization relationships, they cause a huge impact on employee performance than the positive relationships (in Chauhan, 2015 p, 38). Further, a study done by Choi et al., (2019) revealed that abusive supervision and work bullying are the main reasons for social media network addiction among employees. Further, they confirmed that employees' social media addiction leads to work-to-family conflicts and family-to-work conflicts. On the other hand, most of the studies argued that social media addiction not only affects productive time, information overload, role conflict, privacy risk, lack of productivity and low performance, but it also influences the physical and mental well-being of the employees (O'Murchu et al, 2004; D'Abate & Eddy 2007; Nucleus 2009; Rooksby et al., 2009; Shepherd, 2011; Moqbel et al., 2013; Griffiths et al., 2014; Ryan et al ,2014 in Priyadarshini et al., 2020, p.182). The qualitative study done by Priyadarshini et al., (2020) in India revealed that employees are unable to achieve their deadlines due to the excessive use of social media, as a result causing loss of productive time and engaging in non-related work tasks. By exploring their results further, they concluded that the social media addiction at their workplace leads to distraction from work. Employees pointed out that they were unable to control their social media usage, except during some occasions such as team meetings and discussion sessions with their superiors. The use of Facebook, Instagram, and WhatsApp applications are the main tools that cause distraction from work during working hours. On the other hand, employees tend to compromise their quality of work when they try to achieve their deadlines with the excessive use of social media at the same time.

In the Sri Lankan context, there are some studies which analyse the behaviour of employees on social network by using small samples [(Warnakula and Manickam (2010), Balasuriya and Jayalal (2015), Senanayake and Senanayake (2016) and Rathnathilaka et al., (2016)]. A mixed result can be identified by exploring the results of these studies. For example, Rathnathilaka et al (2016) found that the majority of government employees use social networks during working hours for their personal uses rather than professional uses, thus wasting the number of working hours. Further, he elaborated that government employees waste approximately 46 minutes per day due to spending more hours on social media than in completing their job tasks. Warnakula and Manickam (2010) also concluded that social networks cause an adverse effect on their office work because they spend more time on social media than expected. On the other hand, Senanayake and Senanayake (2016) identified that the use of online social networks impacts positively on employee performance. However, the study done by Balasuriya and Jayalal (2015) concluded that a strong correlation between job performance and the usage of social networking cannot be identified. This study is an attempt to gauge employee performance on the basis of work hours of the employees and the nature of the influence of social media addiction towards it.

METHODOLOGY

Primary data is the main source of data for the analysis. The total sample size was decided as 385 by the sample size calculation made by Krejcie and Morgan (1970)[2]. A structural questionnaire is used to collect data. Since social media usage is high among the youth, the sample is drawn from the Facebook accounts of final year undergraduates in Economics of the Sabaragamuwa University of Sri Lanka in year 2018. Each student was advised to get a list of employed people from their Facebook accounts and to select 10 respondents using the systematic random sampling method. A total of 390 employees were selected (with additional five respondents) as the final sample to provide a questionnaire through a telephone survey.

This study allows a comparison between labour supply hours (average hours of work per week day) in the two contexts of addiction and non-addiction into social media, by a worker. The study uses average working hours per week day to represent labour supply as a working definition, due to the limitation of hiding accurate data by the employees on separate breakdown of actual and real working hours as a result of social media addiction. The working definition for social media addiction is based on the social media usage hours per day. The upper confidence interval for the variable of social media addiction is 3.476. The definition for a social media addict is defined as a person who used social media for more than 3.476 hours per day (Table 2).

Since the workers are reluctant to give accurate information on social media usage at work, hours of using social media per day has been used as a proxy and the above working definition was applied for that variable.

Table 2: Confidence Interval for Social Media Usage per Day

Variable	Mean	Std. Err.	[95% Conf.	Interval]
Social media usage per day	2.996	0.244	2.516	3.476

Source: Sample data, 2018

The study uses the endogenous switching regression model to make comparisons between labour supply of employees under two conditions of social media addiction and non-addiction as given below. The switching regression model has been used for the study because this allows to fit binary and the continuous parts of the regression simultaneously with consistent standard errors (Lokshin and Sajaia, 2004; Setboonsarng, et al., 2008).

[2] $s = \chi^2 NP(1-P) \div d^2(N-1) + \chi^2 P(1-P)$, where, s = required sample size, χ^2= the table value of chi-square for 1 df (3.841), N = the population size (Population size was decided based on the number of Facebook Accounts in Sri Lanka (5.5 million -Internet World Stats, 2018)), P = the population of proportion (0.5), d = the degree of accuracy expressed as a proportion (0.05)

If $\boldsymbol{\delta}^T\mathbf{Z}_i + u_i > 0$ individual worker i addicts to social media is denoted by $SM_i = 1$
If $\boldsymbol{\delta}^T\mathbf{Z}_i + u_i \leq 0$individual worker i doesn't addict to social media, denoted by $SM_i = 0$

Regime1: $y_{1i} = \boldsymbol{\alpha}_1^T\mathbf{X}_{1i} + \varepsilon_{1i}$ if $SM_i = 1$ (01)
Regime2: $y_{0i} = \boldsymbol{\alpha}_0^T\mathbf{X}_{0i} + \varepsilon_{0i}$ if $SM_i = 0$ (02)

Where $\mathbf{X_{1i}}$ and $\mathbf{X_{0i}}$ are vectors of explanatory variables; $y_{1i}$and y_{0i} are dependent variables of labor supply measuring average hours of works per week day[3] of social media addicts and non addicts. $\boldsymbol{\alpha_1}, \boldsymbol{\alpha_0}$ and $\boldsymbol{\delta}$ denote vectors of parameters.

$\begin{pmatrix} u_i \\ \varepsilon_{1i} \\ \varepsilon_{0i} \end{pmatrix} \sim N_3\left(\begin{pmatrix} 0 \\ 0 \\ 0 \end{pmatrix}, \Sigma\right)$, where $\Sigma = \begin{pmatrix} \sigma_u^2 & \sigma_{1u} & \sigma_{2u} \\ \sigma_{1u} & \sigma_1^2 & . \\ \sigma_{2u} & . & \sigma_0^2 \end{pmatrix}$ and the covariance between ε_{1i} and ε_{2i} is not defined since y_{1i} and y_{0i} cannot be observed simultaneously.

After estimating the above parameters, the following calculations are made as post estimations of switching regression.

$xb_{1i} = E(y_{1i}|\mathbf{x}_{1i}) = \boldsymbol{\alpha}_1^T\mathbf{x}_{1i}$ (03)

$xb_{0i} = E(y_{0i}|\mathbf{x}_{0i}) = \boldsymbol{\alpha}_0^T\mathbf{x}_{0i}$ (04)

$yc_{1\_1i} = E(y_{1i}|SM_i = 1, \mathbf{x}_{1i}) = \boldsymbol{\alpha}_1^T\mathbf{x}_{1i} + \sigma_1\rho_1 f(\boldsymbol{\delta}^T\mathbf{Z}_i)/F(\boldsymbol{\delta}^T\mathbf{Z}_i)$ (05)
$yc_{1-0i} = E(y_{1i}|SM_i = 0, \mathbf{x}_{1i}) = \boldsymbol{\alpha}_1^T\mathbf{x}_{1i} - \sigma_1\rho_1 f(\boldsymbol{\delta}^T\mathbf{Z}_i)/\{1 - F(\boldsymbol{\delta}^T\mathbf{Z}_i)\}$ (06)
$yc_{0\_1i} = E(y_{0i}|SM_i = 1, \mathbf{x}_{0i}) = \boldsymbol{\alpha}_0^T\mathbf{x}_{0i} + \sigma_0\rho_0 f(\boldsymbol{\delta}^T\mathbf{Z}_i)/F(\boldsymbol{\delta}^T\mathbf{Z}_i)$ (07)
$yc_{0\_0i} = E(y_{0i}|SM_i = 0, \mathbf{x}_{0i}) = \boldsymbol{\alpha}_0^T\mathbf{x}_{0i} - \sigma_0\rho_0 f(\boldsymbol{\delta}^T\mathbf{Z}_i/\{1 - F(\boldsymbol{\delta}^T\mathbf{Z}_i)\}$ (08)

Where x_{1i} denotes all explanatory variables for social media addicts, x_{0i} denotes all explanatory variables for social media non-addicts. xb_{1i} represents the unconditional expectation of hours of work for social media addict; xb_{0i} represents the unconditional expectation of hours of work for social media non-addict, yc_{1-1i} represents the conditional expectations of hours of work for social media addict with social media addiction; yc_{1-0i} represents the conditional expectations of hours of work of social media addict without social media addiction; yc_{0-1i} represents the conditional expectations hours of work for social media non-addict with the addiction of social media; yc_{0-0i}represents the conditional expectations of hours of work for social media non-addict with the non-addiction of social media; σ_1 and σ_0 denotes standard errors of ε_{1i} and ε_{0i}. ρ_1 denotes the correlation coefficient between ε_{1i} and u_i, while ρ_0= correlation coefficient between ε_{0i} and u_i. $f(.)$ denotes a normal density function and F[.] denotes cumulative normal distribution (Setboonsarng, et al., 2008).

[3] Study uses five-week days to measure work hours per day to keep consistency in average work hour calculations between workers in both government and private sectors.

RESULTS AND DISCUSSION

The first part of this section discusses the descriptive analysis that represents the relationship between employees' working characteristics, some demographic factors with social media addiction. The results of the switching regression model will be discussed in the next section. Results of the endogenous switching regression model analyses the first specific objective while the post estimation of the model further discusses the second specific objective under this section.

Table 3 shows that the majority of employees use social media to maintain their social relationships and connections and there is a lack of evidence of the use of social media for work- or job-related tasks. Further, updating news and current events and posting comments and opinions are recorded as the second and third important purposes respectively among the social media users.

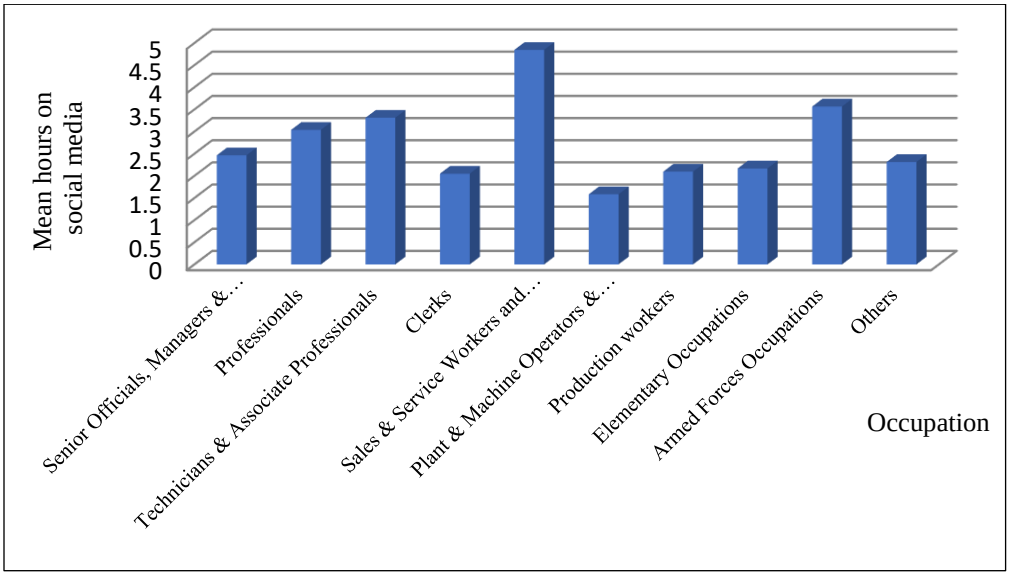
Table 3: Purpose of Using Social Media

Purpose	%
To maintain relationships with friends	46.41
Up to date with news and current events	8.21
To share my opinions / comments	7.18
To find funny and entertaining contents	6.92
To share photos and videos	5.90
To fill up spare time	4.62
General networking with others	2.31
To search buying products	3.08
To meet new people	2.05
For purposes of marketing products	1.03
To find out employment information	1.28
Other	0.77

Source: Sample data, 2018

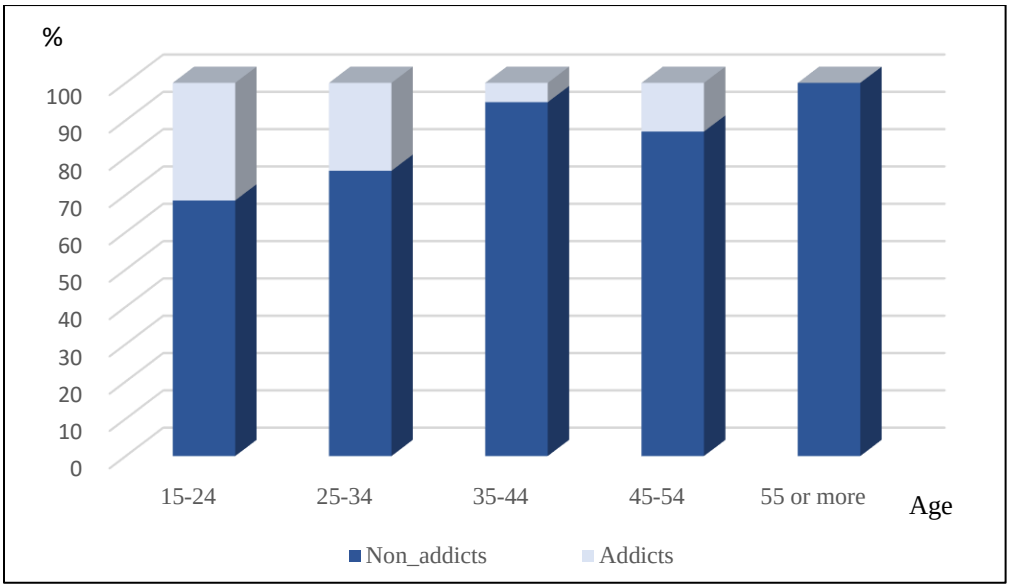
Figure 1 shows that employees who work as sales and service personnel and proprietors spend more time on social media and it is around 4.8 hours per day. The second and third importance goes to employees in the armed forces occupations, technicians and associate professionals. The least time spent on social media is recorded among the employees who are engaged as plant and machine operators and in the assemblers' category, and it is around 1.5 hours per day.

Figure 1: Time on social media and occupation (Mean Hours)



Source: Sample data, 2018

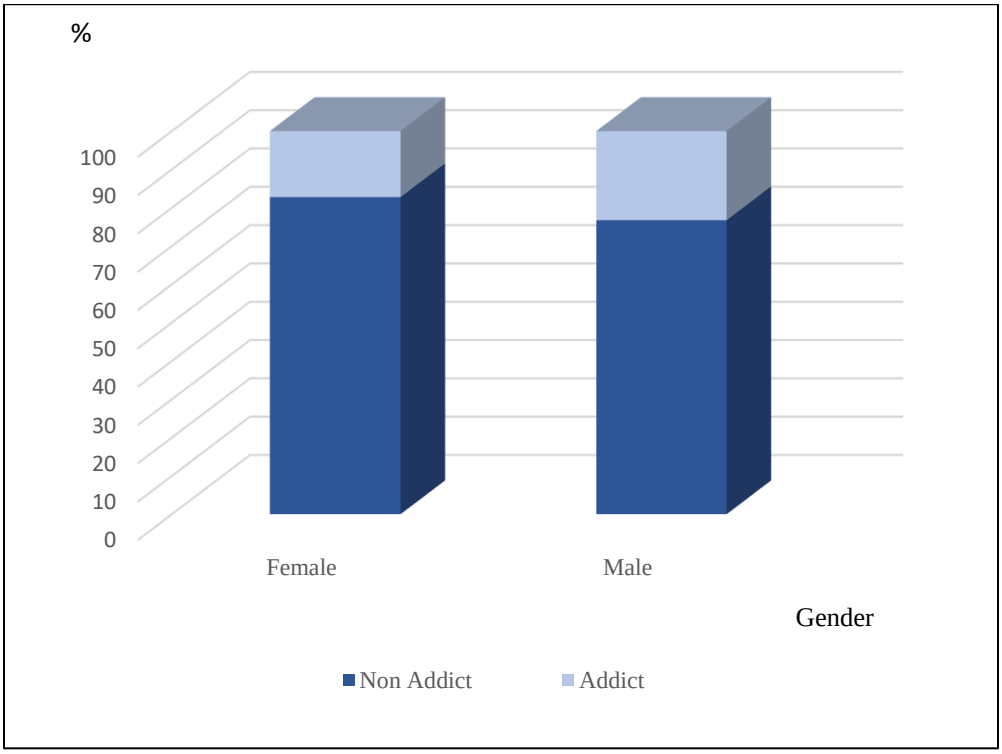
Figure 2: Social media addiction and age



Source: Sample data, 2018

When considering the social media addiction and demographic factors of employees, the addiction of social media significantly decreases with the age. The highest addiction was recorded among the employees who are in the 15-24 age groups (Figure 2). When considering the gender aspects of social media usage, male employees are more addictive to social media then the female (Figure 3).

Figure 3: Social media addiction and gender



Source: Sample data, 2018

Table 4 presents the means and proportions of the variables used for the switching regression model. The average work hours per week day are 8.6. The majority of the sample is relatively youth since the average age is 30 years old. Majority of the sample is male and executive workers. Government sector proportion is lower than the private sector. Most of the members in the sample possess more than the GCE Advanced level education. According to the definition of the study as presented in the methodology, 21 representing the sample were addicted to social media. The majority of the sample is permanent workers. Since the sample is derived using Facebook users, 200 representing this sample have Facebook accounts. In addition to Facebook accounts, the majority use YouTube and WhatsApp as well.

Endogenous switching regression model (Table 5) has identified significant factors associated with social media addiction in the selection function.

According to the selection function the negative relationship between age and social media addiction was found by the study and that is in line with the table of digital literacy reported in Sri Lankan Labour Force Survey (2018) as given in Table 1 and the findings of Senanayake and Senanayake, (2016), Warnakula and Manickam, (2010) and Balasuriya and Jayalal (2015). The attitude towards social media turns negative when age increases, as found by Andreassen et al., (2014).

Table 4: Means and Proportions of the Variables

Variables	Mean/Proportion
Average working hours in weekdays	8.652
Age	30.694
Gender (Being Male) (d)	0.626
Marital Status (Being Married) (d)	0.436
Being an Executive Worker[4] (d)	0.603
Being a Government Worker (d)	0.465
Years of education	14.629
Monthly net salary in thousands	40.424
Social Media Addiction (>3.476) (d)	0.205
Using WhatsApp (d)	0.761
Using Instagram (d)	0.244
Using YouTube (d)	0.797
Using virtual social world/games (d)	0.169
Distance to work	32.350

Note: (d) denotes for dummy variables and proportions were calculated for all dummy variables

Source: Author Constructed

Although previous studies have found different positive and negative associations with social media usage, Gender is an insignificant factor regarding social media addiction in Sri Lanka according to the selection function of this study.

Being a married person has a significant positive relationship with social media addiction and this finding is in line with Andreassen et al., (2014). Social networking enhances with marriage and the possibility of using social media at work could enhance as a result of the marriage of the employee. Executive employees' possibility for social media addiction is high according to this study and Andreassen et al., (2014) also have established a positive association with the attitudes towards social media among top level managers.

Using YouTube and Instagram by the selected Facebook users in the sample has a significant positive relationship with social media addiction. The tendency of using Facebook and YouTube is high among social media users in Sri Lanka according to Balasuriya and Jayalal (2015).

[4]This includes managerial employees, professionals and associate professionals.

Table 5: Endogenous Switching Regression

Variables	Coef.	Std. Err.	z	P>z
workinghours_1(social media addicts)				
Age	0.161	0.079	2.040	0.042
Being Male(d)	1.250	0.732	1.710	0.088
Being Married(d)	-0.168	0.831	-0.200	0.840
Being an Executive Employee(d)	-1.650	0.742	-2.220	0.026
Being Government Worker(d)	0.067	0.695	0.100	0.924
Years of Education	-0.149	0.140	-1.070	0.286
Monthly Net Salary in Thousands	0.010	0.014	0.680	0.494
Constant	10.590	2.373	4.460	0.000
workinghours_0 (social media non-addicts)				
Age	0.013	0.018	0.700	0.484
Being Male(d)	0.822	0.259	3.170	0.002
Being Married(d)	-0.642	0.292	-2.200	0.028
Being an Executive Employee(d)	-0.852	0.271	-3.140	0.002
Being Government Worker(d)	-0.186	0.263	-0.710	0.479
Years of Education	-0.115	0.054	-2.130	0.033
Monthly Net Salary in Thousands	0.019	0.006	3.450	0.001
Constant	8.849	0.861	10.270	0.000
Selection Function				
Social Media Addiction (3.476 hours or more at social media)				
Age	-0.047	0.016	-3.020	0.003
Being male(d)	-0.039	0.170	-0.230	0.817
Being married(d)	0.446	0.187	2.390	0.017
Being an executive employee(d)	0.288	0.170	1.690	0.091
Being government worker(d)	-0.062	0.160	-0.380	0.701
Years of education	-0.007	0.033	-0.200	0.838
Monthly net salary in thousands	-0.002	0.003	-0.620	0.536
Using WhatsApp*(d)	0.103	0.161	0.640	0.520
Using Instagram*(d)	0.337	0.122	2.750	0.006
Using YouTube*(d)	0.449	0.151	2.960	0.003
Using virtual social world*(d)	0.025	0.126	0.200	0.844
Distance for the workplace	0.006	0.001	6.620	0.000
Constant	-0.309	0.601	-0.510	0.607
/lns1	0.767	0.047	16.340	0.000
/lns2	1.312	0.160	8.180	0.000
/r1	-1.787	0.277	-6.450	0.000
/r2	-1.585	0.421	-3.770	0.000
sigma_1	2.154	0.101		
sigma_2	3.712	0.595		
rho_1	-0.945	0.029		
rho_2	-0.919	0.065		
LR test of indep. eqns.: chi2(2) = 60.59				
Number of obs =	385	Prob > chi2 =	0	
Wald chi2(7) =	64.33	Log Likelihood =		-943.4897

Note: (d) denotes for dummy variables and proportions were calculated for all dummy variables.

**These modes of social media were used by respondents in addition to their Facebook accounts.*

Source: Author Constructed

The increasing distance to workplaces increases the commuting time and thus causes an increase in social media addiction. This was significantly proved by the positive relationship between distance and social media addiction of this study. According to Lachmann et al., (2017), there is a positive association between high stress levels due to high commuting time and internet addiction. The positive relationship between distance and social media addiction is acceptable in the sense of reducing stress levels of travelling for this study as well.

Based on the selection of social media addicts and non-addicts, a comparison of hours of work per weekday was modelled and the findings are presented in Table 5. Hours of work among social media addicts is determined by several factors. Increasing age causes an increase in hours of work among social media addicts. The key reason for this positive relationship is that more than 90 percent of the social media addicts in the sample are less than 35 years old. Therefore, most of them are in the age of their squeezed life cycle and are in the beginning of their employment, thus showing a positive association between the age and working hours. Since they are not from the very high age group, they do not enjoy the reduction of work hours due to biological deprivation and other seniority benefits. This young age would automatically increase the unconditional average work hours of social media addicts than the non addicts.

Male workers have higher working hours than the base category for both social media addicts and non-addicts. Generally, females have fewer working hours due to the triple burden of productive, reproductive and socially productive work. Marriage also shows a significant negative relationship with working hours of social media non addicts. Nearly 40 percent of the social media non addicts are females. Increasing household chores and family responsibilities due to marriage causes the reduction in the number of work hours.

Executive employees have a negative relationship with work hours for both social media addicts and non addicts. According to Kaufman (1989), professionals are willing to work less since they draw a fixed salary. The negative relationship with work hours for them is higher for social media addicts than the social media non addicts.

Years of education are a significant factor in determining hours of work among social media non-addicts and it has a significant negative relationship with work hours. Most of the higher educated workers are occupied in white collar employment with lesser number of working hours while most of the lower educated workers are occupied in unskilled or informal work settings with less opportunities and facilities for social media usage. Workers with high monthly net salary and average work hours have significant positive relationships for social media non-addicts.

Based on the post estimation derived using the endogenous switching regression model, it has been found that unconditional expectations of average hours of work by social media addicts is relatively higher than the social media non addicts (Table 6).

Table 6: Post Estimation of Endogenous Switching Regression Model

Post Estimations	Obs	Mean	Std. Dev.	Min	Max
psel	387	0.217	0.152	0.002	0.941
xb1	390	13.474	1.621	10.319	19.164
xb0	390	7.975	0.921	5.820	10.610
yc1_1	80	8.888	1.594	5.696	13.791
yc1_0	307	14.731	1.403	11.462	19.311
yc0_1	80	5.617	1.192	2.830	8.265
yc0_0	307	8.620	0.982	6.351	12.781
mills1	387	1.466	0.448	0.125	3.147
mills0	387	0.373	0.247	0.007	1.994

Note: Names of the Post Estimation variables were explained in Methodology from equation 3-8.

Source: Author Constructed

The low average age of social media addicts could be the key reason for that, since they are at the early stage of their careers as explained earlier. The most important factor is to identify their reactions on average working hours per week day conditional to the social media addiction. Endogenous switching regression facilitates the making of a conditional prediction on this. If a social media addict becomes a non-addict, his conditionally predicted average working hours could increase as a result of giving up the social media addiction. If social media non-addicts get addicted to social media, their working hours will reduce; whereas if they continue as non-addicts their working hours will increase.

Hence, the study found that average working hours per week day reduces due to social media addiction, which aligned with the many other previous studies.

According to the above findings, the study contributes new knowledge of Social media addiction and labour supply in Sri Lanka in two ways. This study allows a comparison of the determinants of average work hours of employees conditional to social media addiction. Secondarily, it has drawn two types of predictions using post estimations of the endogenous switching regression model as unconditional and conditional average work hours of employees. Although unconditional hours are high for social media addicts, the average work hours per day will change if they have given up or have been newly addicted to social media.

CONCLUSIONS AND POLICY INSIGHTS

The study concludes that the social media addiction is negatively affected by age while being married, being an executive employee, using Instagram or YouTube in addition to Facebook and the distance to the workplace have positively affected social media addiction. The higher tendency for social media usage among executives could be used to promote social networking and other positive outcomes through social media. YouTube is the most common method of using social media by employees among the sample and that could be restricted with the support of the network managers of the organization. Increasing commuting time has been identified as a key reason for social media addiction. Encouraging workers to follow online training programs during their travel is one possible way to improve their skills positively during the commuting time.

Average work hours of week day of social media addicts are positively affected by age and gender (being male employees) while being an executive employee has a negative relationship with hours. Being male and receiving a monthly net salary are positively related with the labour supply of social media non-addicts, whereas being married, being an executive employee and years of education have a negative impact on hours of work among them. Existence of lower working hours for higher educated groups and executive employees are aligned with the human capital theories. However, the reduction of working hours among executive employees for social media addicts is higher than social media non addicts. Therefore, Executive officers too should be properly monitored on their performances by the human resource management of the organization.

The second specific objective concludes that although the unconditional average working hours are high for social media addicts due to the young age sub group, their working hours will increase if they escape from the addiction to social media. Also, if social media non addicts get addicted then their labour supply too will reduce. Therefore, human resource managers should develop a social media policy for their organization to avoid its negative influences on the performance of their human capital. Jennings et al (2014), Cairo (2014) also highlighted the importance of a social media policy for an organization in their studies. That should explain the limitations of social media usage and the guidelines for the things they should avoid. Human resource management could arrange alternative leisure events to reduce the work stress of their employees. Rather than totally prohibiting the social media usage, human resource managers could consider allowing social media for a short duration at work, as a refreshment tool to avoid work stress in a way that workers will not get addicted to it. This would improve the maximum capacity utilization of workers of the organizations.

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