Investigating The Influence of Work Overload and Social Pressure On Employees Shadow Cloud It Usage During the Covid-19 Pandemic Mco Period

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Abstract

Covid-19 has been declared a pandemic by the world health organization in march 2020. the pandemic has resulted in hundreds of thousands of deaths globally. In curtailing the pandemic, countries and organizations have responded by implementing MCO measures such as the quarantine of suspected victims and communities, social distancing, and all forms of lockdowns. Furthermore, the sudden MCO measures imposed globally presented individuals, organizations and countries with many major challenges they weren't prepared for. While this have forced many businesses, events, conventions and organizations to halt activities, many are able to continue their daily activities virtually, using the cloud IT systems. The purpose of this study is to empirically examine how the structural factors of work overload and social pressure influences employee's cognitive strain and their interaction with the Shadow Cloud IT systems during the MCO period. This research follows the quantitative approach design. The respondents are employees and online survey method was used in collecting data. SPSS and PLS-SEM applications were used in the data analysis. The result shows that work overload and social pressure have a direct significant relationship with employee's Shadow Cloud IT usage while only work overload had a direct relationship with cognitive strain. The result also shows that cognitive strain is significantly related with shadow Cloud IT usage during the covid-19 pandemic global lockdown. Organizations presently are at the risk of information systems security breaches and exposure of organization data, as a result of employees increased interactions with Shadow Cloud IT.

Keywords: Cognitive Strain: Covid-19 pandemic; Movement control order; Shadow Cloud IT; Social Pressure; Work Overload.

Introduction

The global paradigm regarding information systems has fully evolved towards the cloud systems. Reports and extant literatures have shown a significant increase in people's interactions with cloud systems (Jordan & McKnight, 2020; Lawrence, 2020). Employees are not left behind in this global IS shift and cloud systems is becoming the focal point of many organization activities. As a result of this, interactions with unauthorized cloud systems, otherwise known as cloud shadow IT is on the increase (Born & Krönung, 2016a; Bourne, 2020; Goswami & Geetha, 2020). new applications and websites domains are being registered on daily basis and new cloud applications being released in large quantities. This has led to severe security breaches and huge increase in cybercrimes, systems threats, assets vulnerabilities surge in online frauds, scams and attack of IS systems with malwares (Gozman & Willcocks, 2018a; Muncaster, 2020; Netskope, 2016; NTT, 2016). some of the employee's cloud shadow IT usage include the incorrect application of security procedures when interacting with cloud systems, interaction with unapproved cloud systems and assessment of organization IS information and data via personal cloud devices. These employees acts of interaction with cloud shadow IT is leading to increase in vulnerabilities in organization IS securities and diverse IS security breaches (Aurigemma & Mattson, 2017; GISS, 2018; Humaidi et al., 2018; ISTR, 2017; Noyes, 2007; SANS, 2018; Verizon, 2018).

The purpose of this paper is to explore, from the behaviorist epistemology perspective, the motivations for cloud shadow IT usage in organizations. the behaviorist epistemology perspective explains the motivation for people's behaviors based on environmental influence. This paper explores the structural and the psychological impact of organizational structural imbalances on employee's shadow IT behaviors moreover, the paper uses the strain theory as its theoretical background. The strain theory as a psychological theory explains the imbalances in the structural systems, as the motivations for people's unethical behaviors in the society.

Research objective: to examine the relationship that exist between organization structural factors of work pressure and overload on employees cognitive strain and their shadow cloud IT usage.
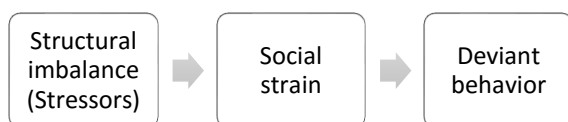

*Figure 1 Strain Theory overview*

2.1 Strain Theory
This paper uses the psychological strain theory in examining the motivating factors for employee's interaction with cloud shadow systems. In relation, the idea of strain theory

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perceived strain as a reaction to stressful demands and imbalance in organization structural factors which results in individual's deviant behaviors. The idea of strain can be explained also by Hooke's law, which explains the concept of strain based on external weight, which affect the shape of an event, human mind inclusive and the problems that arises (Hooke, 2019; Lazarus, 2009). The idea of this study perceive strain as a depletion in the human psychological cognitive resources caused by structural imbalances. Cognitive Strain as a psychological analogue reflect the people's reaction to stressful environment and the bodily emotional reactions to stressors which goes deeper than the physical stress.

Cloud Shadow IT usage in organization

technological advancement has prompted the need for organization IT investments, IT upgrade, and the need to keep up to par with the current technologies. This has brought about the evolution towards a change in the paradigm of information system (IS) from the traditional hosting systems to the more automated cloud systems. organization survival in the present times, amidst intense competition, generally depends on its IT systems. The many valuable impacts of the cloud systems have therefore, enhanced its global acceptance. Moreover, organizations are increasingly depending on virtual interactions, assessing of IT needs over the cloud, uploading of organization data in the cloud (data storage) and initiation and completion of tasks online (Khan & Al-Yasiri, 2018; Sabi et al., 2018). This has also led to the usage of various forms of cloud shadow IT systems.

Trend on shadow IT literature
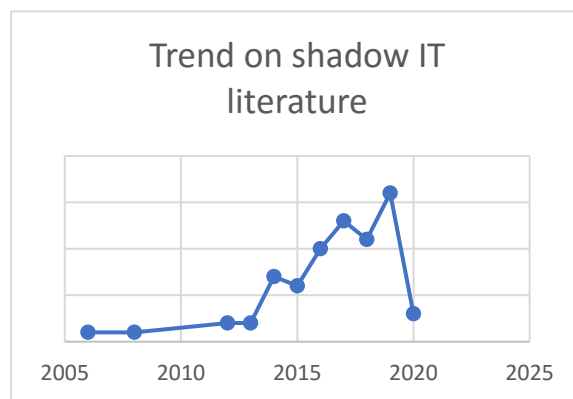
Work overload

Work overload refers to the high work demands faced by employees in organization. It is an imbalance in the structural systems of the organization that might due to lack of sufficient manpower and other structural facilities. This results in employees deviant behaviors (Adeoti et al., 2017; Lim et al., 2008). High work demands tends to creates innovativeness in people, in creating short cuts and faster routes to carrying out work demands. (Arnold et al., 2018; Beehr & Bhagat, 1985; Liu et al., 2005; Shah, 2018; Spielberger & Reheiser, 1994). cloud shadow IT systems has been described as attractive through its attributes of easing tasks, once, employees may tend to relate with the shadow cloud IT systems as a result of the need to cope with the high work demands.

Social pressure

Work pressure in this paper refers to the pressures from the human relationship factors in the organizations. This refers to the social pressure at work from the management and co-workers (Adeoti et al., 2017; Ghasemi et al., 2018; Ho-Jung & Cho, 2016; Gabriela L. Mallmann et al., 2018).. Management pressure includes the pressures that employees feels from relating with the management, such as the influence of their managers, supervisors, leaders and bosses and their views regarding the cloud shadow systems. peer pressure refers to the pressures employees feel as a result of co-worker's influences. Previous studies have revealed the impact of work pressure on employees behaviors (Amponsah-Tawaih & Adu, 2016; Bosak et al., 2013; Varonen & Mattila, 2000).

3   Research model and hypothesis

The employees has been described as a very important member of the organization as the success or failure of the organization rests majorly on the human resources (Bulgurcu et al., 2010) Moreover, the employees are human being with emotions, and mental capabilities, unlike the other resources, This include their ability to reason, ability to defy logics, rationalities and probabilities, as well as their emotional intelligence (Albers, 1997; Sweller, 1993). Their emotions reflects their mental condition, whether happy or sad, frustrated or angry and decisions can be made based on their emotions (Ahn et al., 2010; Korunka et al., 2010).

Moreover, studies have revealed that when people are mentally drained, they may not be able to think logically again, as their focus is shifted towards the completion of their tasks, they may not be able to weigh the balance of the impacts of their actions such as the actions that portrays their non-compliance to organizational policies (Johansson & Aronsson, 1991; Konieczny, 2018). This can, therefore, explain employee's motivation for cloud shadow IT usage.
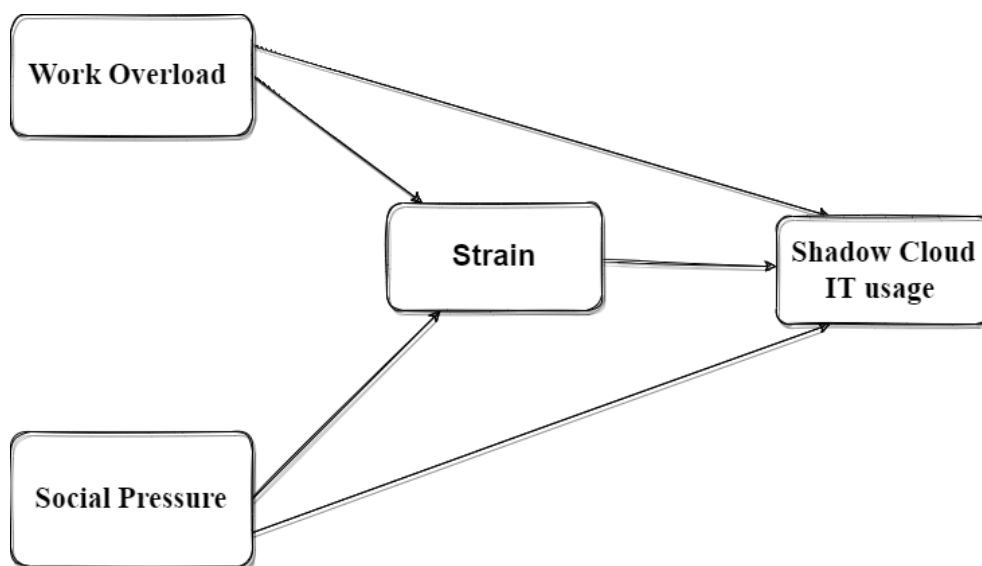
In relation, high work demands without the needed technical support tend to reveal the innovativeness in people. The innovative solutions to structural imbalances are described by Strain theory as one of the deviant behavioural reactions of individuals (Agnew & Agnew, 2013; Merton & Ashley-Montagu, 1940). In the context of this study, such behaviours include interacting with cloud Shadow IT systems which will foster ease of initiating and completion of tasks (Silic et al., 2017). For example, when work demand analysis of extensive data, without access to conventional IT systems to assist in the analysis, employees may download macros and plug-ins, and, interact with random cloud sites that offers solution that eases their tasks. This will boost their efficiency.

Previous studies on work pressure have empirically revealed that it motivates employees workplace behaviours (Amponsah-Tawaih & Adu, 2016; Bosak et al., 2013; Varonen & Mattila, 2000). These past studies have focused on the impact of pressures such as Marginalization, discrimination and backlash by the management on employees behaviours (Gulseren, Thibault, & Kelloway, 2019). The past studies revealed that workplace pressure affects the employees' sense of belonging in the workplace, their goals, their performance, their relationship at work and their deviant behaviours in Organization (Rudman & Phelan, 2008; Gulseren, Thibault, & Kelloway, 2019). The relationship between social pressure and Shadow IT usage has been examined by Gabriela Labres Mallmann & Maçada (2017). And the study found the link to be significant. Hence, this study will examine how work pressure influences cloud shadow IT usage. The mediating relationship of cognitive strain on work pressure and cloud Shadow IT will not be considered now. It will only be examined after the data analysis of this study prove there is a relationship between the independent and dependent variable (work pressure and cloud Shadow IT usage).

H1:	Cognitive strain is positively related to shadow cloud IT usage
H2	work overload is positively related to shadow cloud IT
H3	Social pressure is positively related to shadow cloud IT
H4	Work overload is positively related to cognitive strain
H5	Social pressure is positively related to cognitive strain

4   Research Methodology

Theoretical constructs used in this study were measured and operationalized using validated items adapted from previous researchers. A five-point Likert scale was chosen
as a response format for this study where 1 refers to 'strongly disagree' and 5 refers to 'strongly agree'.
To measure Shadow Cloud IT usage, 6 item scale was adapted from past literature (Mallmann & Maçada, 2017). " an exclusion criteria question was adapted from Do you use cloud IT

systems to carry out official tasks at work?" which was adapted from Walterbusch, Fietz, and Teuteberg (2017).

To measure social pressure, a five scale item has been adapted from Sillic (2019) and Mallmann et al. (2018). This includes items such as " My boss is concerned about my usage of cloud-based systems which were not provided by the IT department." and " My workmates use cloud-based systems which were not provided by the IT department, to perform their work tasks".

4.1 Data collection

The data was collected using online survey method by distribution of online questionnaires. The questionnaires were created using google form and a link was generated which was shared to lecturers in three federal universities. Part one of the questionnaire seek to examine usage of cloud IT systems by employees. This is used as an exclusion criteria question because the main focus of the study is employees who interact with the cloud system. Part two of the questionnaire examined the constructs of the study, the dependent variables and the independent variables. This include work overload, work pressure , cognitive strain and Shadow Cloud IT usage.

Finally, part 3 gathers demographic information. The respondents were first screened and only those who interact with cloud IT systems were used for the analysis were selected. In total, 330 responses were received in two weeks. After removal of invalid and incomplete responses, 208 were used for subsequent analyses.

Employees were the respondents of this study and data were collected from employees from professional managerial and administrative levels. Respondents includes employees in the public sectors, non-governmental organizations, service sector, manufacturing sectors among others. This was done in other for generalizability of result. Questionnaire was done using google form and the link to the questionnaire were sent to the employees who answered the questions. The gender was 22% male and 79% female.

5   Data analysis and results

Shadow Cloud IT is a behavioural phenomenon; hence, the research was conducted at the individual level using employees. This study used the two-step approach by Anderson and Gerbing (1988). This include the assessment of the measurement model as well as the testing of the structural model using SPSS and Smart PLS were used in analysis.

All estimated standard loadings were higher than 0.70, and the AVE for all exceeded the recommended level of 0.50, suggesting good convergent validity by Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). As shown in Figure 1, the estimation model with standardized regression weights and a confirmatory factor analysis (CFA) was conducted, to empirically test the measurement model. Multiple tests on construct validity and reliability were performed. As the α- values (Table 1) for all the constructs were greater than the guideline of 0.60, it can therefore be concluded that the scales can be applied for the analysis with acceptable reliability.

CR and AVE were calculated from model estimates using the CR formula and AVE formula given by Fornell and Larcker (1981). Table 2, presents the standardized value of direct, indirect and total effect among the latent variables.

	Composite Reliability
Work Overload	0.905
Social Pressure	0.902
Cognitive Strain	0.870
Shadow IT usage	0.865

	Path	**P-value**	**t-value**	**Description**	**Decision**
H1	Work Overload and Shadow Cloud IT usage	0.000	5.645	IT inaccessibility positively influences Shadow Cloud IT usage during Covid-19 pandemic MCO	Supported
H2	Social Pressure and Shadow Cloud IT Usage	0.000	8.022	Social pressure positively influences Shadow Cloud IT usage during Covid-19 pandemic MCO	Supported
H3	Strain and shadow cloud IT	0.000	7.006	Cognitive strain positively influences Shadow Cloud IT during Covid-19 pandemic MCO	Supported
H4	Work overload and strain	0.002	3.121	Work pressure positively influences cognitive strain during Covid-19 pandemic MCO	Supported

H5	Social pressure and Strain	0.387	0.869	Social pressure positively influeces cognitive strain during Covid-19 pandemic MCO	Not Supported

Discussion and Conclusion

The path analysis indicates that work overload had direct positive influence on cognitive strain and cloud shadow IT usage. the influence of social pressure on cloud shadow IT usage is significant while its influence on cognitive strain is not significant. Cognitive strain has a significant positive influence on cloud shadow IT usage.

This study expatiated the theoretical understanding of the Shadow Cloud IT usage, by understanding the views of the employees regarding their views on the organization structures which will influence their usage decision. Second, this study extends the strain theory by introducing factors such as work overload and social pressure, to provide a greater understanding and explanatory power of the employee's perception towards organization structures. These constructs are justified by statistical tests to impacts employees' behaviours. This study will also impact the academics by providing an empirical research into employee's cloud IT behaviours during the covid-19 pandemic. Finally, this study will impact the organization IS policy makers in understanding the expectations of employees regarding the organization structures, in order to put the necessary action to improve the cloud IT systems in organization and create an improved security in the organization IS.