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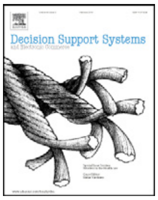

Impact of psychological traits on user performance in information systems delivering customer service: IS management perspective

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ABSTRACT

Information systems-assisted customer service delivery has emerged as a strategic imperative that is increasingly tied to information systems resources, organizational capabilities, and work environment in organizational information systems management. Despite the potential of information systems, extensive diversity exists in the task performance within organizations which provokes the factors of psychological traits that affect performance. Drawing upon information systems success literature–contextual theories of organizational creativity, and behavioral and human psychology in an organizational environment–this paper develops a model to assess user performance in an organizational IS in providing customer services. Here, hypotheses have been developed in regard to the interaction of system satisfaction and organizational work environments with the user's psychological traits and how these interactions influence their performance. The model has been tested using survey data collected from a total of 314 respondents, regarding the users of a call center information system employed in a large organization. Results from the partial least squares analyses support the proposed model and highlight the important role of psychological traits in mediating the effect of systems, and organizational environment on performance. The findings also shed new light on the technological and organizational factors associated with the user performance. The implications of the findings for research and practice are discussed.

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1. Introduction

The performance enhancement of information systems (IS) users within an organization is a necessary step to achieve quality customer service and the organization's competitive advantage [58]. Today's service-based economy faces major challenges in assessing and managing the performance of the employees (users) involved in a human in-the-loop systems [21]. In particular, call centers have become a core part of the service industry, therefore require interactions between the users and customers. Hence, the provision of quality customer service has emerged as a strategic imperative for most organizations, and this is highly related to IS resources and organizational capabilities [68]. Quality customer service is not only the most important factor in achieving customer satisfaction, but is also the principal criterion for measuring the competitiveness of the customer service process [89]. Similarly, the increased emphasis on customer service has emerged as a key motivation in prioritizing the call center IS, reflecting the general recognition of the essential role that IT plays in this process [29].

Despite the business value creation of information systems [35], extensive diversity exists in task performance within competing organizations [73]. Particularly, in the context of call centers, IS management faces criticisms from callers about the user's (operators') capability in effectively processing customer requests [3]. There are also complaints from the users regarding the management and work environment [82]. Furthermore, in recent years, the media has paraded call centers as prime examples of stressful work environments. These issues raised crucial challenges for managers of the workforce [44]. As a result, the operational challenges faced by call center managers have become more complicated [2]. These issues have provoked the consideration on how psychological traits may impact user performance with IS of organizations in providing customer services, especially in the context of call centers [27]. However, academic studies regarding the call center IS management and performance are currently limited in both number and scope, especially in the fields of organizational IS work environment and human psychological traits.

Behavioral scientists have a long history and impressive track record of using psychology for improving human performance and productivity, quality of work life satisfaction, and organizational effectiveness [27]. The literature regarding human resource management and strategy identifies organizational work environment as a critical non-IT resource in determining the user performance in providing service [68]. While a number of studies have already emphasized the critical role

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of IS in customer service [29], however, empirical research examining the link between IS and the user performance is still lacking. Previous studies on call centers have focused on issues such as queuing models [45], optimization problems [50], multi-skill call centers [1], work organization, work station layout, work postures, physical factors in the work environment, and ergonomics [10,83]. However, there remains a further need to examine the impact of user behaviors on the operations and service quality in depth [2]. Therefore, empirical analyses based on historical data will be extremely valuable in providing insight into these questions [2]. Yet, the framework on the organizational work environment and the impact of human psychological behavior on performance enhancement are still lacking in this regard. Furthermore, regardless of some psychometrically sound instruments that are available for assessing perceptions of organizational environments and human psychology in general, very few scholars have attempted to quantitatively assess the work environment for the user performance of organizational IS [5].

In this light, to improve the explanatory values of the factors associated with user performance in organizational IS and work environment, this paper developed a model drawing upon IS success literature, contextual theories of organizational creativity, behavior, and human factor psychology in an organizational work environment. This model will specifically explain how the user's psychological traits mediate the impacts of the systems and organizational environment on work life satisfaction and performance. It also focuses on identifying the factors that can be generalized across organizational IS and environments regarding the influence of psychological traits on the user performance. The hypothesized model has been tested using a total of 314 survey data points collected from call center operators of a large organization. Research questions addressed in this paper focus on (1) the impacts of psychological traits on user performance in an organizational IS which provides customer service and (2) the technological and organizational factors that shape user performance in an organizational IS which provides customer service.

By addressing these research questions, this paper contributes to the IS success literature by providing empirical evidences regarding the impacts of psychological traits on performance, as well as by isolating a parsimonious set of factors that are theoretically grounded to affect user performance in organizational IS in providing customer services. Thereby, this study contributes to the development and management of motivational propensities in organizational IS management for human resources, implying the substantial returns that may be yielded by investing in the development of psychological traits, beyond those of the other traditional forms of capital investment.

The remainder of the paper is structured as follows. In the next section, a theoretical framework will be developed. Followed by the framework, a research model and hypothesis will be constructed in Section 3. Sections 4 and 5 will describe the research method, the procedure of data analysis and the results of the model tested. Finally, in Sections 6 and 7, the findings of this research will be discussed, as well as the theoretical and managerial implications, limitations, and future research directions, followed by the conclusions.

2. Theoretical framework

Our theoretical framework was found upon these three elements: IS success literature, contextual theories of organizational creativity and behavior, and human psychological traits in an organizational work environment. Perceptual measures of IS success have been employed extensively over the years, with essential reliance on the system satisfaction as a surrogate measure of IS success [30]. Again, IS researchers have recently scrutinized phenomena such as users, the user competence, and the IT artifact as the core of system usage [15]. Based on this, we argue that the system satisfaction retains its influence throughout the life cycles of IS.

Recent contextual theories of organizational creativity and innovation have attempted to identify work environments that are related to user activities [5]. Previous studies have found that call center works tend to be intense in physical and emotional sense, as they involve performance pressure, close surveillance, and limited autonomy [83]. Bohle and his colleagues (2011) found a relationship between work intensity and work life conflicts in relation to the satisfaction level of individuals [13]. Work life conflicts associated with higher levels of both chronic fatigue and psychological symptoms have also been supported by the findings of a previous study in the healthcare sector [13]. Therefore, environmental factors, regardless of its strengths, have no effect on the behavior of an organization itself, unless it first affects the behaviors of human agents directly involved with the IS within the organization [51]. Thus, we argue that environmental factors affect the performance of key organizational IS users throughout the industry. The literature on organizational behavior, especially, “the study and application of positively-oriented human resource strengths and psychological capacities,” suggests that the psychological capacities can be developed, measured, and effectively managed to enhance the user performance [53]. Particularly, some positive traits of human psychological capacities such as hope [77], optimism [71], resiliency [57], and self-efficacy [62] are found to have a positive impact on work-related performance and satisfaction on an individual level [53]. Therefore, we argue that the system satisfaction and organizational environment affect the user performance after being mediated by their psychological traits; hence, our theoretical framework is grounded on this proposition. We developed a conceptual model (Fig. 1) that is grounded on IS-assisted customer services, organizational environments, and user psychological traits in the context of call centers.

2.1. IS satisfaction and performance

System satisfaction is one of the criterion variables [54], and most widely used measure in assessing the IS success [25,26]. Furthermore, it has been predominantly critical in the IS implementation as well [7]. The fundamental argument behind this approach is that high levels of system satisfaction lead to high levels of user performance [46]. The reciprocal relationship between system satisfaction and system use has been touted as one of the key constructs representing the IS success [31,32]. Further, in the Garrity and Sanders Model of IS success, system satisfaction has been an antecedent of individual/organizational influences that can reflect individual/organizational performance [31,32]. DeLone and McLean made an explicit distinction between the information aspects and the systemic features as determinants of satisfaction in their highly cited model [26]. In fact, in their model, net benefit has been used as the primary concept to measure the performance [31,32]. Traditionally, system satisfaction has been measured indirectly through information quality, system quality, service quality [8,67,87], as well as through the equitable need fulfillment (work performance, relatedness, and self-development fulfillment) [7]. Furthermore, previous studies validated user system satisfaction as a function of performance [7], thus revealing that an effective system and perception about lower user effort leads to increased user satisfaction [33]. Therefore, these comprehensive reports suggest that the user system satisfaction is highly relevant in understanding the user performance in organizational IS.

2.2. Organizational IS environment and performance

The organizational work environment has been identified as a critical non-IT resource that determines the customer service performance [68]. In this context, the work environment refers to the employees' perceptions of the practices, procedures, and behaviors

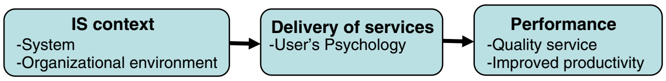

Fig. 1. Conceptual framework.

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