Promoting employee resilience through information sharing: An empirical investigation

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Abstract

Human resource management practices that promote the growth and sustainability of a resilient workforce are crucial for contemporary organizations. This research aimed to examine an underexplored relationship: the impact of information-sharing practices on employee resilience within the Egypt's information and communication technology sector. To achieve this, a descriptive and quantitative cross-sectional study was conducted using data collected through an online, self-administered questionnaire. A proportional stratified sample of 392 respondents was utilized, and both descriptive and path analysis were performed to test the study's research hypothesis. The results implied a statistically positive significant impact of information-sharing practices on employee resilience. This research furnishes some theoretical and practical implications as along with recommendations for future research.

1. Introduction

The prevailing constants in today's business environment are dynamic change and persistent challenges. Today's organizations are continuously confronted with numerous pressures, including resource scarcity, rapid technological changes (Tonkin et al., 2018), rising customer expectations, and intense competition. Additionally, organizations encounter a multitude of diverse global crises (Malik & Sanders, 2023) and natural disasters (Tonkin et al., 2018). For organizations to not only survive but also thrive and succeed, they must effectively address these adversities and challenges (King et al., 2015; Khan et al., 2019). It is also widely acknowledged that people are the most crucial and critical resource within any organization. Zahi et al. (2022) highlight that there is a growing consensus among both scholars and practitioners that the success of organizations significantly relies on this crucial resource. Thus, it is argued that human resource management systems and practices play a strategic role in influencing people's behaviors (Harsch & Festing, 2019; Salmen & Festing, 2021), ultimately contributing to the establishment a competitive advantage for the organization (Kim et al., 2022).

A key behavior that impact an organization's performance and success in a challenging business environment is the establishment and maintenance of a resilient workforce (Ssewankambo & Pule, 2018). Previous research suggests that employee resilience plays a key role in enhancing an organization's capability in bridging these challenges and adversities (Liu et al., 2019; Rodríguez-Sánchez, 2021; Zhai et al., 2022). As a result, the concept of employee resilience has become a focal point for researchers in the fields of organizational behavior and human resource management (Kossek & Perrigino, 2016; Nadeem et al., 2019; Raetze et al., 2021).

Despite the significant importance of employee resilience, the lack of a shared understanding of employee resilience has impeded progress in both theoretical and empirical research (Fisher et al., 2018; Hartmann et al., 2019; Raetze et al., 2021; Galy et al., 2023). This lack of clarity has resulted in confusion surrounding the concept itself. Furthermore, while resilience has been predominantly examined conceptually (Branicki et al., 2016) there has been limited empirical investigation into the impact of organizational practices on fostering employee resilience (Cooke et al., 2019; Khan et al., 2019; Teng-Calleja et al., 2020; Kuntz, 2021; Rodríguez-Sánchez, 2021; Samo et al., 2021; Jegatheesparan & Samaradiwakara, 2022).

From the job demands-resources model lens, one could posit that the constantly increasing demands stemming from the dynamic business environment may impede employees' capacity to meet such overwhelming demands (Huang et al., 2016; Adil & Baig, 2018). On the other hand, fostering and nurturing employees' resilience could serve as a valuable resource in enabling them to navigate through challenges and mitigate the impact of excessive demands (Adil & Baig, 2018; Nuutinen et al., 2021; Wang & Yang, 2021). It is evident that human resource management practices have the potential to significantly contribute to enhancing employee resilience (Harsch & Festing, 2019; Salmen & Festing, 2021).

Information sharing practices have been identified as an underexplored area that can enhance employee resilience (Wahid et al., 2014; Park, 2017; Battistelli et al., 2019). The importance of information and its dissemination in promoting organizational success cannot be underestimated (Ripatti, 2016; Bata et al., 2020). In this respect, information sharing could be deemed as a valuable resource that empowers employees to cope with the uncertainties presented by the environment. To address this research gap, this study aims to answer the research question pertaining to whether information-sharing practices have an impact on employee resilience within the information and communication technology sector in Egypt, more specifically within the software development as well as the system and solutions integration sub-sectors.

With the objective of broadening the theoretical framework, this research endeavors to explore the direct influence of information-sharing practices on employee resilience through empirically investigating this relationship within the information and communication technology sector in Egypt. Consequently, this research has both theoretical and practical implications. At the theoretical level, this research explores the relationship through the lens of the job demands-resources model. Within this framework, both employee resilience and information-sharing practices are considered job resources that strengthen an organization's workforce to effectively manage the significant challenges posed by the dynamic and unpredictable business environment.

At the practical level, this research provides insights to companies' top executives and human resource management professionals. In the light of this, organizations should establish a culture of open and transparent communication to guarantee a seamless flow of information throughout the organization. Thus, employees would fully comprehend their designated roles, responsibilities, and the overall direction of the organization. As a result, employees would be better equipped to fulfill the requirements of their positions.

2. Literature Review and hypothesis development

This section aims to provide an overview of the research variables and their interrelationships.

2.1. Employee resilience

Resilience, as a concept, encompasses the ability and determination of both organizations and employees to recover and rebound from setbacks or adversities (Linnenluecke, 2015), thereby, playing a role in facilitating people's positive adjustment to challenging and adverse circumstances (King et al., 2015). Despite its significance in today's volatile business environment, there is an ongoing debate regarding the conceptualization of resilience, whether it is considered a trait, capacity, process or a combination of different approaches (e.g. Kossek & Perrigino, 2016; Cooke et al., 2019; Hartmann et al., 2019; Britt & Sawhney, 2020; Teng-Calleja et al., 2020).

Some academics in the field of psychology opted to define resilience from a personality trait perspective (Kossek & Perrigino, 2016; Raetze et al., 2021), drawing upon personality theory (Kossek & Perrigino, 2016). This approach suggests that resilient people are generally more skilled at enduring and surmounting challenges and adversities compared to those lacking resilience. For example, results indicated that conscientious people often exhibited high resilience levels because they are well organized and hard workers (Hartmann et al., 2019). Here, resilience is approached from a static view thereby, categorizing people as resilient or non-resilient (Fisher et al., 2018; Raetze et al., 2021).

On the other hand, many scholars conceptualize resilience from a state-like or a capacity/capability perspective. In this view, resilience is perceived as an attribute that can be developed (Kossek & Perrigino, 2016; Kuntz et al., 2016; Fisher et al., 2018; Hartmann et al., 2019; Samo et al., 2021). Though this characteristic might be stable in the short-run, it demonstrates adaptability over the long-run (Hartmann et al., 2019). As a result, resilience is linked to the possession of specific sets of resources that are distinct from adversity but contribute positively to handling adversity (Teng-Calleja et al., 2020; Raetze et al., 2021).

Recently, scholars started adopting a process-oriented approach when conceptualizing resilience. Following this line of thought, resilience is seen as the process through which people confront and manage adversity encompassing affective, cognitive, and behavioral processes that people employ to sustain and gain their normal functioning in face of challenges (Raetze et al., 2021) and environmental risks (Kossek & Perrigino, 2016; Liu et al., 2019). In this context, resilience is a dynamic phenomenon that arises in response to varying circumstances and results in the demonstration of favorable adaptation (Hartmann et al., 2019).

Examining the various perspectives on resilience indicates a consensus on certain aspects. On one hand, all interpretations emphasized the importance of confronting a certain level of adversity that disrupt an individual's functioning (Bardoel et al., 2014; Fisher et al., 2018). Additionally, resilient people demonstrate the ability to achieve positive results in the face of serious threats. This connection between resilience and favorable results is closely linked to enhanced performance and overall well-being (Bardoel et al., 2014; Hartmann et al., 2019; Khan et al., 2019).

Building on the literature review and tailored to the research objectives, this research operationalizes employee resilience from the capability standpoint. Thus, it is defined as the capacity of employees within an organization to effectively overcome setbacks and thrive amid difficulties and hardships (Linnenluecke, 2015; Bhattacharyya et al., 2019; Cooke et al., 2019; Zhai et al., 2022; Okojie et al., 2023), while utilizing available resources provided by the organization to adapt and grow at work continuously (Tonkin et al., 2018). In this sense, it is argued that employee resilience plays a pivotal role in shaping an employee's response to workplace stress, as well as mitigating the adverse effects of work pressure and sustaining the required levels of productivity and well-being (Nadeem et al., 2019; Okojie et al., 2023).

Prior research has contributed similar findings regarding the effects of employee resilience where it demonstrated that employee resilience has a notably positive and significant impact on behaviors and attitudes at work (Athamneh & Jais, 2023) when encountering obstacles (Okojie et al., 2023), performance (Kašpárková et al., 2018), and work engagement (Sholikhah et al., 2021). Similar results were also found in relation to service delivery (Ssewankambo & Pule, 2018) and creative high performance work practices (Aparma and Sahney, 2022). Other studies examined the mediating effect of employee resilience. For example, a study considered its mediating role between learning culture, knowledge sharing and affective commitment to change (Malik and Garg, 2017), the mediating role between adaptive humor styles at work and wellbeing (Bhattacharyya et al., 2019), and between organizational resilience and work engagement (Wu et al., 2022).

2.2. Information Sharing Practices

Information sharing within an organization ensures that employees are well-informed about business outcomes (Maden, 2015; Dahou & Hacini, 2018; Al Doghan, 2019) at the operational and strategic levels (Alla & Rajaa, 2017). Accordingly, information sharing practices could be defined as the organizational procedures incorporating the dissemination and reception of information that flows within an organization. Put differently, information sharing practices are regarded as the process through which an organization distributes information to its employees in a timely manner (Bata et al., 2020; Vuong & Sid, 2020; Liu et al., 2023) thereby, promoting mutual trust between the organization and its employees (Wahid et al., 2014; Alla & Rajaa, 2017; Cooper et al., 2019; Wang & Shaheryar, 2020; PHAM, 2021; Poku & Yussif, 2022), especially during challenging and (turbulent) times (Senanayake, 2020; Ngoc Su et al., 2021).

In this sense, information dissemination helps employees in gaining a better understanding of their roles and responsibilities (Battistelli et al., 2019; Liu et al., 2023) which eventually leads to better alignment of their behaviors with organizational goals, objectives (Nifadkar et al., 2018; Wang & Shaheryar, 2020; Poku & Yussif, 2022; Alshareef, 2023) and policies (Park, 2017; Khan et al., 2019; Poku & Yussif, 2022; Alshareef, 2023). For example, communication of periodic performance feedbacks provides employees with valuable information that fosters continuous improvement (Poku & Yussif, 2022). In addition, provision of ongoing meetings that discusses with employees critical and essential updates (Al Doghan, 2019) signals to employees that their contributions are valued (Vuong & Sid, 2020; PHAM, 2021; Alshareef, 2023).

The researcher recognizes a notable paucity in the empirical investigations of information-sharing practices. However, in line with the research objectives, this study operationalized information-sharing practices as the timely (prompt) dissemination and reception of information that flows within the organization (Bata et al., 2020; Vuong & Sid, 2020; Liu et al., 2023). As a result, the cultivation of a knowledgeable workforce that aligns with the strategic and operational goals of the organization enhances employees' abilities to effectively adapt their behaviors accordingly.

According to previous studies, information-sharing practices were among the human resource management practices that had a significant positive impact on organizational commitment (Prabusankar, 2015; Alla & Rajaa, 2017), organization citizenship behavior (Park, 2017), employees' trust in their supervisors (Nifadkar et al., 2018), employee engagement (Al Doghan, 2019; Vuong & Sid, 2020), innovation (Heidary Dahooie et al., 2021), employee retention (Poku & Yussif, 2022), employee's turnover intention (Nagar & Agarwal, 2022), organizational performance (Liu et al., 2023), employee performance (Hui et al., 2023), and employees' mobilization behavior (Alshareef, 2023). Conversely, the study of Walid et al. (2014) found insignificant relationship between information sharing and performance in small and medium enterprises. Additionally, Sun et al., (2018) showed no significant association between job satisfaction and information sharing.

2.3. Information Sharing and Employee Resilience

Very few studies have empirically investigated the relationship between information sharing and employee resilience. For instance, an exploratory qualitative study conducted among employees in Pakistani telecommunication sector concluded that information sharing practices were among the crucial and critical human resource management practices that enhanced employee resilience (Khan et al., 2019). In addition, the study of Cooper et al. (2019) revealed that wellbeing-oriented human resource management practices had a positive direct and significant effect on employee resilience, with information sharing practices being one of key practices being analyzed. Senanayake (2020) similarly found a direct positive significant relationship between high performance work practices and employee resilience where the information sharing practices were among the studied set of practices. Moreover, Liu et al. (2023) established a positive influence of information sharing on resilience which eventually impacts firm performance.

Following the job demands-resources model, adversities stemming from constant turbulence in the business environment would be classified as job demands (Kossek & Perrigino, 2016; Fisher & Law, 2020), thus triggering a health impairment process (Baker & Demerouti, 2017). On the other hand, employee resilience can be viewed as a valuable job resource that helps in buffering the negative effects of job demands and stressors (Kossek & Perrigino, 2016; Fisher & Law, 2020) through the initiation of a motivational process (Baker & Demerouti, 2017). In this respect, resilience enables employees to proactively cope with ongoing stressors and develop coping strategies to navigate ongoing challenging situations and intense stressors (Cooper et al., 2019; Liu et al., 2019; Kumar & Das, 2022; Zhai et al., 2022).

On the other hand, information sharing could be viewed as a job resource for several reasons. Firstly, information sharing practices qualify as a job resource as they help in clarifying in employees' job roles and responsibilities (Wang & Shaheryar, 2020). Secondly, the provision of updates on organizational changes (Al Doghan, 2019) reduces ambiguities and stress, further enhancing its role as a resource. In spite of this, the empirical investigation of the significant role of information sharing

practices on employee resilience is still under explored (Park, 2017; Battistelli et al., 2019; Khan et al., 2019).

In this sense, employee resilience and information sharing practices serve as vital job resources that enable an organization's workforce to effectively manage the increasing demands presented by the contemporary turbulent and dynamic business environment. In this context, figure (1) depicts the proposed relationship between information sharing practices and employee resilience within the information and communication technology sector in Egypt, particularly focusing on the software development as well as the systems and solution integration sub sector. Accordingly, this research posits:

H_1: There is a positive and statistically significant impact of information sharing practices on employee resilience.

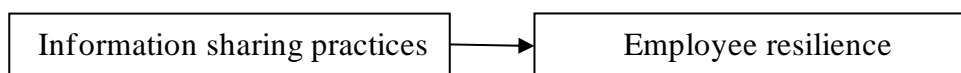| Information sharing practices	→	Employee resilience

Figure (1): Research model

3. Research Design

The current research employs a cross-sectional quantitative method to assess the impact of information sharing practices on employee resilience. A proportional stratified random sample was utilized. A sample of 392 employees was proportionally distributed by companies' size and stratified by various managerial levels (top, middle, and staff levels). The data was collected based on a self-administered online survey. Statistical analyses were conducted using SPSS 26.0, Lisrel 10.2, and Minitab 17.0 software.

4. Population and sample

Egypt, within the MENA region, possesses the necessary qualifications to emerge as a leading digital innovator resulting from its strategic geographical location and the presence of a burgeoning youth population (World-Bank-Group, 2020). In Egypt, the information and communication technology sector plays a critical role in enhancing economic growth. In 2020/21, this sector marked the highest annual growth rate of 16.7% and created approximately 215,000 job opportunities (MCIT, 2023). This empirical study was confined to investigating the impact of information sharing practices on employee resilience within the software development as well as the systems and solutions integration sub-sectors. In this respect, companies employing a minimum of 200 employees were included in the study to ensure that they have well-established human resource management departments.

Based on the Information Technology Industry Development Agency (IDITA) online database, the total population within the designated sub-sectors in this empirical investigation was 28,885 employees distributed among three managerial levels namely,

top management (9%), middle management (18%), and staff level (72%). This quantitative cross-sectional study employed a proportional stratified random sample to address the research question regarding how information sharing practices affect employee resilience and Guerci et al.'s (2019) suggestion to use employees as the unit of analysis.. Accordingly, a sample size of 392 respondents was determined. The sample was proportionally distributed according to number of employees in each company and stratified by managerial levels.

5. Data collection

Since respondents were Egyptians, a bilingual (English and Arabic) self-reported questionnaire was administered using online google forms. As recommended by Bryman (2012), a vertical layout was adopted to facilitate clarity, readability, and data coding. To this end, the questionnaire was designed to include three main sections. The first section was dedicated to collecting demographic data including gender and managerial level. The second section was dedicated to conveying the research purpose, and emphasizing respondents' anonymity and confidentiality of collected data (Cooper & Schindler, 2014). Lastly, the final section included statements to test the research variables (information sharing practices and employee resilience). Following the recommendation of Sekaran and Bougie (2016), a 5-Likret scale was employed where "1" indicated strong disagreement and "5" reflected strong agreement.

6. Measurement tools

To ensure content validity, alignment with research objectives, and the specific context of information and communication technology in Egypt, careful consideration was given to the selection of the appropriate measurement instruments. Consequently, the following validated measurement instruments were utilized to enhance content validity:

1. <u>Information sharing practices</u>: Four statements of Muduli (2017) validated instrument was partially used to capture respondents' perception on this variable. "It has specific mechanisms for sharing lessons learned in organizational activities from department to department (unit to unit, team to team)" (Muduli, 2017, p. 51) is an illustration of statements included in this measure.

2. <u>Employee resilience</u>: Cai et al. (2019) validated measurement instrument was partially used to assess respondents' perception on this research variable. Here, three statements were chosen where "I am able to perform my job efficiently in difficult or stressful situations" (Cai et al., 2019, p.62) exemplifies incorporated statements.

7. Demographic profile of sample respondents

Data was collected from a sample of 392 respondents of employees working in the software development as well as the systems and solutions integration sub-sectors within the information and communication technology sector in Egypt. As indicated in table (1), 80.40% of the respondents were males while 19.60% were females. In addition, the breakdown of participants in terms of top management, middle management and staff level were 8.90%, 18.90%, and 72.20% respectively. It is important to highlight that this breakdown adhered to the specified stratification criteria.

Table (1): Sample respondents' profile	Frequency	Percent
Gender		
Male	315	80.40
Female	77	19.60
Managerial level		
Top management	35	8.90
Middle Management	74	18.90
Staff level	283	72.20

8. Data Analysis

SPSS 26.0, Lisrel 10.2 and Minitab 17 software were employed to assess the reliability and validity of the measurement tools as well as conducting the descriptive and inferential statistics.

8.1 Exploratory factor analysis

Using SPSS 26.0 software, and upon the recommendation of Hair et al. (2019), the principal component analysis with varimax rotation was utilized to evaluate whether the items designed to measure a specific construct form a distinct factor that is separate from other factors. In addition, as suggested by Taherdoost (2016), a minimum factor loading of 0.40 is considered acceptable. As indicated in table (2), all instruments met the minimum threshold.

8.2 Descriptive statistics

Descriptive statistics plays a critical role in providing a 'general feeling' of the dataset. Thus, it is regarded as a valuable instrument in offering a significant framework for the analyzed dataset (Hair et al., 2019). As shown in table (3), the findings of the exploratory factor analysis indicated that respondents' perception on both employee resilience (mean = 3.84) and information sharing practices (mean = 3.64) were above average mean and their standard errors were 0.039 and 0.040 respectively, indicating a more precise estimate of the population mean.

Code	Statement	Factor loading
Table (2): Factors Loadings		
Employee resilience		
WFR1	"I am able to perform my job efficiently in difficult or stressful situations" *(Cai et al., 2019, p. 62)*	0.855
WFR2	"I can adapt well in light of workloads" *(Cai et al., 2019, p. 62)*	0.865
Information sharing practices		
WBI2	"It encourages frequent organizational conversations that keeps alive the lessons learned from history" *(Muduli, 2017, p. 51)*	0.772
WBI3	"It has specific mechanisms for sharing lessons learned in organizational activities from department to department (unit to unit, team to team" *(Muduli, 2017, p. 51)*	0.818
WBI4	"Top management repeatedly emphasizes the importance of knowledge sharing in my organization" *(Muduli, 2017, p. 51)*	0.850

Table (3): Average scores and their significance

Variable	sample mean	Standard error	P - Value	95% confidence interval for mean
Employee resilience	3.84	0.039	0.011	3.79 - 3.90
Information sharing practices	3.64	0.04	<0.001	3.46 - 3.75

In the current empirical study, two demographic variables were considered namely, gender and managerial levels. With respect to gender, an independent sample T-test assessed whether there was any significant difference between males and females. As reflected in table (4), there was no statistically significant difference between males and females for employee resilience and information sharing practices (p-value = 0.79, 0.43 respectively). Furthermore, the standard error means for employee resilience and information sharing practices for both males and females were small indicating that a more precise estimate of the population.

Table (4): Comparing means between males and females

Variable	Gender	Mean	Standard Deviation	Standard Error Mean	p-value
Employee resilience	Male	3.85	0.74	0.04	0.79
	Female	3.82	0.89	0.10	
Information sharing practices	Male	3.63	0.81	0.05	0.43
	Female	3.71	0.75	0.09	

An ANOVA test was administered to evaluate the statistical significance between top management, middle management, and staff levels. As shown in table (5) that there was a statistically insignificant difference (p-values > 0.05) for both employee resilience and information sharing practices across the different managerial levels. Like the case of gender, the standard error means for employee resilience and information sharing practices for the three managerial levels were small reflecting again a more precise estimate of the population.

Table (5): Comparing means between managerial levels					
Variable	**Managerial levels**	**Mean**	**Standard Deviation**	**Standard Error Mean**	**p-value**
Employee resilience	Top management	4.04	0.82	0.14	0.26
	Middle management	3.85	0.75	0.09	
	Staff	3.82	0.77	0.05	
Information sharing practices	Top management	3.84	0.92	0.16	0.11
	Middle management	3.50	0.89	0.10	
	Staff	3.66	0.76	0.04	

8.3 Testing the model goodness of fit

Lisrel 10.2 was employed to evaluate the theoretical model goodness of fit. As shown in table (6), all indices met their respective thresholds. This implies that the model adequately represents the relationship between information sharing practices and employee resilience.

Table (6): Goodness of fit indices results	
Index	**Results**
Root mean square approximation (RMSEA)	0.06
Chi-square / degrees of freedom	2.36
Normed fit index (NFI)	0.985
Non-normed fit index (NNFI)	0.978
Comparative fit index (CFI)	0.991
Incremental fit index (IFI)	0.991
Relative fit index (RFI)	0.962
Root mean square residual (RMR)	0.025
Standardized root mean square residual (SRMR)	0.025
Goodness of fit (GFI)	0.991
Adjusted goodness of fit (AGFI)	0.964

8.4 Reliability and validity of the measurement instruments

Before proceeding to testing the hypothesis, an evaluation of the reliability and validity of the measurement tools is deemed essential. To measure the reliability of the measurement instruments, Cronbach's coefficient of reliability and composite reliability were estimated. Here, employee resilience measurement instrument was 68.9% which almost hit the minimum threshold of 70%, whereas the composite reliability was 75.49% thereby meeting the minimum threshold. Similarly, information sharing practices measurement instrument exhibited a value of 76.20% and 80.62% for Cronbach's coefficient of reliability and composite reliability respectively. Thus, it could be argued that both measurement tools exhibited stability and consistency of the statements incorporated in the measurement instruments (Bryman, 2012).

With respect to the validity of the measurement instruments, the variance explained, average variance extracted, and discriminant validity were evaluated. For employee resilience, the variance explained, average variance extracted values were 76.15% and 67.0% respectively. On the other hand, for information sharing practices,

the variance explained was 68.07%, whereas the average variance explained was 58.20%. Based on the values of both measures, it could be inferred that both measurement instruments accurately measure what they were intended to measure (Sekaran & Bougie, 2016). In addition, the discriminant validity was also measured to assess whether employee resilience and information sharing practices were empirically differentiated. The result of the discriminate validity was 56.15% indicating that respondents could clearly differentiate the two latent constructs.

8.5 Structural model: Hypothesis testing

Structural equation modeling helps the researcher in identifying the strength, direction, and statistical significance of the relationship between the research variables. Using Lisrel 10.2 to test the research hypothesis pertaining to the direct impact of information sharing practices on employee resilience. As exhibited in table (7), there was a positive and statistically significant (p-value < 0.001) relationship thereby verifying the research hypothesis (H_1). Furthermore, as reflected in the path coefficient, an improvement in information sharing practices is likely to bring a 43.80% improvement in employee resilience.

Table (7): Direct impact of information sharing practices on employee resilience

The effect	Path Coefficient	Standard Error	t-value	P-value	S*
Information sharing practices → employee resilience	0.438	0.066	6.666	< 0.001	S
* Significance					

9. Discussion

Given that both demographic variables (gender and managerial levels) did not exhibit a statistically significant difference in terms of the research variables, it can be concluded that a single model can be employed to test the theoretical model. In addition, there was a positive, statistically significant (p-value < 0.001) and moderate correlation between information sharing and employee resilience (r = 0.438l). This implies that improvements in information sharing practices is expected to enhance employee resilience. Accordingly, the novel findings of this research contributes to the literature and fulfill the void identified in the existing literature. (Cooper et al., 2019; Khan et al., 2019; Senanayake, 2020; Cafferkey et al., 2021; Liu et al., 2023).

In light of this, it is recommended that organizations operating in the Egypt's information and communication technology sector should take a variety of alternatives to improve employee resilience by increasing the effectiveness of their information sharing practices. In order to minimize any ambiguities that may lead to stress and inefficient performance, organizations are urged to design their information sharing practices in a way that guarantees the prompt and clear dissemination of information to employees.. Additionally, organizations should build a culture of trust where

employees are encouraged to express their opinions, concerns, and ideas because information flow is a two-way process.

10. Implications

This section will explore the theoretical and practical implications. The theoretical aspect will delve into the job demands-resources model, while the practical aspect will strive to provide guidance to Egyptian organizations operating in the information and communication technology sector by shedding light on how information sharing practices can enhance employee resilience.

10.1 Theoretical Implications

Prior studies have highlighted a gap in the empirical investigation of how organizational practices impact employee resilience (Cooke et al., 2019; Khan et al., 2019; Teng-Calleja et al., 2020; Kuntz, 2021; Rodríguez-Sánchez, 2021; Samo et al., 2021; Jegatheesparan & Samaradiwakara, 2022). Specifically, the relationship between information sharing practices and employee resilience has received limited attention from researchers (Wahid et al., 2014; Park, 2017; Battistelli et al., 2019). Thus, this study addressed this gap by examining the influence of information sharing practices on employee resilience in the information and communication technology sector in Egypt. In addition, drawing on the job demands-resources model, it is posited that both employee resilience and information sharing practices can be considered as job resources. These resources are expected to mitigate the adverse effects of high job demands stemming from the dynamic and unpredictable nature of the business environment.

10.2 Practical Implications

Considering the power of information sharing and the significance of building and maintaining a resilient workforce, this research presents insights into the different approaches human resource management professionals and top-executives may utilize to facilitate and strengthen information sharing among employees and promote their resilience. Company executives are urged to create and maintain a culture of open and transparent communication that encourages free flow of information. Such environment could be fostered through the development of an effective suggestion system that acknowledges and rewards successful ideas. Furthermore, it is essential to hold regular meetings with employees to disseminate the latest information as well as encourage open expression of thoughts, opinions, and ideas. Finally, incentivizing employees who share information, both formally and informally, with their peers is expected to promote this collaborative environment.

11. Limitations and Future Research

This empirical investigation provides valuable insights into how information sharing practices affects employee resilience, but it is crucial to recognize its

limitations. This research is confined to Egypt's information and communication technology sector, thereby limiting the ability to generalize its findings to a more global context and other industries. In addition, as a cross-sectional study, the data is captured at a specific point in time, limiting the ability to observe changes in behavior over time. Moreover, reliance on self-reported questionnaires introduces the risk of common method bias, which could impact the reliability of the data. Finally, there may be other intervening or confounding variables that could potentially influence the conclusions drawn from this study.

Considering the limitations of this research, it is recommended to conduct a longitudinal study to trace changes in employees' behaviors over time. Moreover, it is recommended to test the current research theoretical model within different geographical and industrial settings to further enhance its generalizability. In addition, future research may consider examining the influence of other human resource management practices such as rewards practices or performance management practices or even the combined effect of bundles of practices on employee resilience. Furthermore future research may consider examining the moderating effect affecting the relationship between the research variables including, for example, age, experience, gender, and managerial levels.

12. Conclusion

In a dynamic and challenging business environment, organizations must establish and maintain a resilient workforce capable of handling the immense pressure that comes with such a turbulent setting. Undoubtedly, the role of information plays a pivotal role in helping employees to align their behaviors with overall organizational direction. Despite the significance of information sharing within organizations, limited research has been conducted to explore the relationship between information sharing practices and employee resilience. To address this gap, the current research was guided by the job demands-resources model, and empirically confirmed a positive and statistically significant impact of information sharing practices on employee resilience in Egypt's information and communication technology sector with special emphasis on software development as well as systems and solutions integration sub-sector. Based on the research findings, the research discussed the theoretical and practical implications beside the research limitations and recommended future research.

References

Adil, M. S., and Baig, M. (2018). Impact of job demands-resources model on burnout and employee's well-being: Evidence from the pharmaceutical organisations of Karachi. *IIMB Management Review, 30*(2), 119-133 doi:10.1016/j.iimb.2018.01.004

Al Doghan, M. A. (2019). Examining the Effects of Perceived Organizational Support, a Fair Rewards System, Training and Development and Information Sharing on Employees Engagement in Saudi Arabia Telecom Sector. *Humanities and Social Sciences Letters, 7*(3), 181-190 doi:10.18488/journal.73.2019.73.181.190

Alla, A. A., and Rajaa, O. (2017). Impact of Person-Job Fit, Person-Organization Fit, Information Sharing and Empowerment on Organizational Commitment of Moroccan Banks Managers. *International Journal of Emerging Research in Management &Technology, 6*(2), 16 - 22

Alshareef, R. (2023). Effect of Human Resource Management Practices on Mobilization Behavior Mediating Role of Procedural Justice. *International Science Letters, 12*(8), 2877-2890

Aparna, S. M., and Sahney, S. (2022). Examining resilience: the role of creativity-oriented high-performance work practices and role clarity. *Journal of Organizational Change Management, 35*(7), 1047-1060 doi:10.1108/jocm-11-2021-0356

Athamneh, M. H. A., and Jais, J. (2023). Factors affecting human resource agility: A literature review and future research directions. *Cogent Business & Management, 10*(1) doi:10.1080/23311975.2023.2193181

Baker, A. B., and Demerouti, E. (2017). Job demands-resources theory: Taking stock and looking forward. *J Occup Health Psychol, 22*(3), 273-285 doi:10.1037/ocp0000056

Bardoel, E. A., Pettit, T. M., De Cieri, H., et al. (2014). Employee resilience: an emerging challenge for HRM. *Asia Pacific Journal of Human Resources, 52*(3), 279-297 doi:10.1111/1744-7941.12033

Bata, P. P., Norman, A., and Allen, D. (2020). Information Sharing Behaviour of Complex and Extended Organisations. *International Journal of Business and Management;, 15*(11), 41 - 52 doi:10.5539/ijbm.v15n11p4

Battistelli, A., Odoardi, C., Vandenberghe, C., et al. (2019). Information sharing and innovative work behavior: The role of work-based learning, challenging tasks, and organizational commitment. *Human Resource Development Quarterly, 30*(3), 361-381 doi:10.1002/hrdq.21344

Bhattacharyya, P., Jena, L. K., and Pradhan, S. (2019). Resilience as a Mediator Between Workplace Humour and Well-being at Work: An Enquiry on the Healthcare Professionals. *Journal of Health Management, 21*(1), 160-176 doi:10.1177/0972063418821815

Branicki, L., Steyer, V., and Sullivan-Taylor, B. (2016). Why resilience managers aren't resilient, and what human resource management can do about it. *The International Journal of Human Resource Management, 30*(8), 1261-1286 doi:10.1080/09585192.2016.1244104

Britt, T. W., and Sawhney, G. (2020). Resilience capacity, processes and demonstration at the employee, team and organizational levels: a multilevel perspective. In *Research Handbook on Organizational Resilience*.

Bryman, A. (2012). *Social research methods* (Fourth ed.). USA: Oxford University Press.

Cafferkey, K., Harney, B., Townsend, K., et al. (2021). Guest editorial. *Employee Relations: The International Journal, 43*(4), 829-841 doi:10.1108/er-06-2021-545

Cai, Z., Parker, S. K., Chen, Z., et al. (2019). How does the social context fuel the proactive fire? A multilevel review and theoretical synthesis. *Journal of Organizational Behavior, 40*(2), 209-230 doi:10.1002/job.2347

Cooke, F. L., Wang, J., and Bartram, T. (2019). Can a Supportive Workplace Impact Employee Resilience in a High Pressure Performance Environment? An Investigation of the Chinese Banking Industry. *Applied Psychology, 68*(4), 695-718 doi:10.1111/apps.12184

Cooper, B., Wang, J., Bartram, T., et al. (2019). Well-being-oriented human resource management practices and employee performance in the Chinese banking sector: The role of social climate and resilience. *Human Resource Management, 58*(1), 85-97 doi:10.1002/hrm.21934

Cooper, D. R., and Schindler, P. S. (2014). *Business Research Methods* (12th ed.). U.S.A: McGraw-Hill/Irwin.

Dahou, K., and Hacini, I. (2018). Successful Employee Empowerment: Major Determinants in the Jordanian Context. *Eurasian Journal of Business and Economics, 11*(21), 49-68 doi:10.17015/ejbe.2018.021.03

Elshaer, I. A., and Saad, S. K. (2022). Learning from Failure: Building Resilience in Small- and Medium-Sized Tourism Enterprises, the Role of Servant Leadership and Transparent Communication. *Sustainability, 14*(22) doi:10.3390/su142215199

Fisher, D. M., and Law, R. D. (2020). How to Choose a Measure of Resilience: An Organizing Framework for Resilience Measurement. *Applied Psychology, 70*(2), 643-673 doi:10.1111/apps.12243

Fisher, D. M., Ragsdale, J. M., and Fisher, E. C. S. (2018). The Importance of Definitional and Temporal Issues in the Study of Resilience. *Applied Psychology, 68*(4), 583-620 doi:10.1111/apps.12162

Galy, A., Chenevert, D., Fouquereau, E., et al. (2023). Toward a new conceptualization of resilience at work as a meta-construct? *Front Psychol, 14*, 1211538 doi:10.3389/fpsyg.2023.1211538

Guerci, M., Hauff, S., and Gilardi, S. (2019). High performance work practices and their associations with health, happiness and relational well-being: are there any tradeoffs? *The International Journal of Human Resource Management, 33*(2), 329-359 doi:10.1080/09585192.2019.1695647

Hair, J. F., Black, W. C., Babin, B. J., et al. (2019). *Multivariate Data Analysis* (Vol. 8th). Hampshire, UK: Cengage Learning.

Harsch, K., and Festing, M. (2019). Dynamic talent management capabilities and organizational agility—A qualitative exploration. *Human Resource Management, 59*(1), 43-61 doi:10.1002/hrm.21972

Hartmann, S., Weiss, M., Newman, A., et al. (2019). Resilience in the Workplace: A Multilevel Review and Synthesis. *Applied Psychology, 69*(3), 913-959 doi:10.1111/apps.12191

Heidary Dahooie, J., Estiri, M., Zavadskas, E. K., et al. (2021). A Novel Hybrid Fuzzy DEA-Fuzzy ARAS Method for Prioritizing High-Performance Innovation-Oriented Human Resource Practices in High Tech SME's. *International Journal of Fuzzy Systems, 24*(2), 883-908 doi:10.1007/s40815-021-01162-2

Huang, Q., Xing, Y., and Gamble, J. (2016). Job demands–resources: a gender perspective on employee well-being and resilience in retail stores in China. *The International Journal of Human Resource Management, 30*(8), 1323-1341 doi:10.1080/09585192.2016.1226191

Hui, Y., Na, L., Vijayaratnam, P., et al. (2023). Correlation Between Human Resource Management Practices and Teachers' Performance in China Shandong Vocational Colleges to Improve Quality of Education. *Kurdish Studies, 11*(2), 2464-2470 doi:10.58262/ks.v11i02.179

Jegatheesparan, L., and Samaradiwakara, G. D. M. N. (2022). A Study on Public Library Employee Resilience at Workplace with special reference to the Eastern Province of Sri Lanka *Library Philosophy and Practice (e-journal), 6996*, 1-21

Kašpárková, L., Vaculík, M., Procházka, J., et al. (2018). Why resilient workers perform better: The roles of job satisfaction and work engagement. *Journal of Workplace Behavioral Health, 33*(1), 43-62 doi:10.1080/15555240.2018.1441719

Khan, Z., Rao-Nicholson, R., Akhtar, P., et al. (2019). The role of HR practices in developing employee resilience: a case study from the Pakistani telecommunications sector. *The International Journal of Human Resource Management, 30*(8), 1342-1369 doi:10.1080/09585192.2017.1316759

Kim, S., Vaiman, V., and Sanders, K. (2022). Strategic human resource management in the era of environmental disruptions. *Human Resource Management, 61*(3), 283-293 doi:10.1002/hrm.22107

King, D. D., Newman, A., and Luthans, F. (2015). Not if, but when we need resilience in the workplace. *Journal of Organizational Behavior, 37*(5), 782-786 doi:10.1002/job.2063

Kossek, E. E., and Perrigino, M. B. (2016). Resilience: A Review Using a Grounded Integrated Occupational Approach. *The Academy of Management Annals, 10*(1), 729-797 doi:10.5465/19416520.2016.1159878

Kumar, P. S., and Das, V. T. (2022). Effectiveness of Employee Resilience Among Information Technology Sector Employees: An Empirical Study. *EPRA International Journal of Economics, Business and Management Studies, 9*(2), 62-68 doi:10.36713/epra1013

Kuntz, J. C. (2021). Resilience in Times of Global Pandemic: Steering Recovery and Thriving Trajectories. *Appl Psychol, 70*(1), 188-215 doi:10.1111/apps.12296

Kuntz, J. R. C., Näswall, K., and Malinen, S. (2016). Resilient Employees in Resilient Organizations: Flourishing Beyond Adversity. *Industrial and Organizational Psychology, 9*(2), 456-462 doi:10.1017/iop.2016.39

Linnenluecke, M. K. (2015). Resilience in Business and Management Research: A Review of Influential Publications and a Research Agenda. *International Journal of Management Reviews, 19*(1), 4-30 doi:10.1111/ijmr.12076

Liu, B., Li, Y., Tang, L., et al. (2023). The impact of enterprise resilience and HRM practices on performance: Findings from fsQCA. *Front Psychol, 14*, 1114087 doi:10.3389/fpsyg.2023.1114087

Liu, Y., L. Cooper, C., and Y. Tarba, S. (2019). Resilience, wellbeing and HRM: a multidisciplinary perspective. *The International Journal of Human Resource Management, 30*(8), 1227-1238 doi:10.1080/09585192.2019.1565370

Maden, C. (2015). Linking high involvement human resource practices to employee proactivity. *Personnel Review, 44*(5), 720-738 doi:10.1108/pr-01-2014-0030

Malik, A., and Sanders, K. (2023). Managing Human Resources During a Global Crisis: A Multilevel Perspective. *British Journal of Management, 32*(4) doi:10.1111/1467-8551.12484

MCIT. (2023). MCIT Achievements 2022. Retrieved from https://mcit.gov.eg/en/Media_Center/Press_Room/Press_Releases/66732

Muduli, A. (2017). Workforce agility: Examining the role of organizational practices and psychological empowerment. *Global Business and Organizational Excellence, 36*(5), 46-56 doi:10.1002/joe.21800

Nadeem, K., Riaz, A., and Danish, R. Q. (2019). Influence of high-performance work system on employee service performance and OCB: the mediating role of resilience. *Journal of Global Entrepreneurship Research, 9*(1) doi:10.1186/s40497-018-0142-2

Nagar, P., and Agarwal, A. K. (2022). Employees' Intention in Hotel Industry, Due to Impact of Human Resourcce Practices in Jaipur India. *International Journal of Multidisciplinary Educational Research, 11*(4(7)), 99-107 doi:http://ijmer.in.doi./2022/11.04.205

Ngoc Su, D., Luc Tra, D., Thi Huynh, H. M., et al. (2021). Enhancing resilience in the Covid-19 crisis: lessons from human resource management practices in Vietnam. *Current Issues in Tourism, 24*(22), 3189-3205 doi:10.1080/13683500.2020.1863930

Nifadkar, S. S., Wu, W., and Gu, Q. (2018). Supervisors' work-related and nonwork information sharing: Integrating research on information sharing, information seeking, and trust using self-disclosure theory. *Personnel Psychology, 72*(2), 241-269 doi:10.1111/peps.12305

Nuutinen, S., Ahola, S., Eskelinen, J., et al. (2021). How job resources influence employee productivity and technology-enabled performance in financial services: the job demands–resources model perspective. *Journal of Organizational Effectiveness: People and Performance, 9*(2), 233-252 doi:10.1108/joepp-01-2021-0014

Okojie, G., Ismail, I. R., Begum, H., et al. (2023). The Mediating Role of Social Support on the Relationship between Employee Resilience and Employee Engagement. *Sustainability, 15*(10) doi:10.3390/su15107950

Park, R. (2017). Exploring the link between top-down information sharing and organisational performance: the moderating role of flexible manufacturing strategy. *Human Resource Management Journal, 27*(4), 598-613 doi:10.1111/1748-8583.12142

PHAM, T. N. M. (2021). The Relationship Between Human Resource Management Practices, Work Engagement and Employee Behavior: A Case Study in Vietnam. *Journal of Asian Finance, Economics and Business, 8*(4), 1003-1012 doi:10.13106/jafeb.2021.vol8.no4.1003

Poku, M. B. A., and Yussif, A.-M. (2022). Effect of Human Resource Management Practices on Employee Retention: Perspectives from the Mining Industry in Ghana. *International Journal of Research in Humanities and Social Studies, 9*(4), 1-20

Prabusankar, R. (2015). Impact of Human Resource Management Practices on Organizational Commitment in Small Scale Industries in Coimbatore District. *International Journal of Business and Administration Research Review, 2*(11), 164-168

Raetze, S., Duchek, S., Maynard, M. T., et al. (2021). Resilience in Organizations: An Integrative Multilevel Review and Editorial Introduction. *Group & Organization Management, 46*(4), 607-656 doi:10.1177/10596011211032129

Ripatti, J. (2016). *Towards Agile Workforce – Case Study Research in Three Companies.* (Masters degree), Aalto University, Finland.

Rodríguez-Sánchez, A. M. (2021). Yes, We Can Boost Resilience: Human Resource Management Practices to Build Resilience in the Workplace. In *Work Life After Failure?: How Employees Bounce Back, Learn, and Recover from Work-Related Setbacks* (pp. 83-98).

Salmen, K., and Festing, M. (2021). Paving the way for progress in employee agility research: a systematic literature review and framework. *The International Journal of Human Resource Management*, 1-54 doi:10.1080/09585192.2021.1943491

Samo, A. H., Shaikh, N., Ibrahim, I., et al. (2021). Reap the resilience, stop wearing the worry: exploring the role of resilience enhancing practices in organizational outcomes. *Journal of Indian Business Research, 13*(2), 324-340 doi:10.1108/jibr-04-2020-0121

Sekaran, U., and Bougie, R. (2016). *Research methods for business : a skill-building approach* (7th ed.). United Kingdom: John Wiley & Sons.

Senanayake, E. B. K. (2020). *High-Performance Work Practices and Employee Resilience in New Zealand's Public Services: A Conditional Indirect Effect Model Of Leadership Styles.* (Masters of Commerce), Victoria University of Wellington, New Zealand.

Sholikhah, S., Nathasya Marbun, R., and Parimita, W. (2021). The Influence of Learning Organization and Employee Resilience on Work Engagement at Bumn Bank Branch Office in Bogor. *IJHCM (International Journal of Human Capital Management), 5*(2), 11-25 doi:10.21009/ijhcm.05.02.2

Ssewankambo, T., and Pule, S. (2018). Employee Resilience, Information Inductance and Service Delivery among Private Health Insurance Providers in Uganda. *The International Journal of Business & Management, 6*(12) doi:10.24940/theijbm/2018/v6/i12/BM1811-008

Sun, Y., Jiang, H., Hwang, Y., et al. (2018). Why should I share? An answer from personal information management and organizational citizenship behavior perspectives. *Computers in Human Behavior, 87*, 146-154 doi:10.1016/j.chb.2018.05.034

Taherdoost, H. (2016). Validity and Reliability of the Research Instrument; How to Test the Validation of a Questionnaire/Survey in a Research. *SSRN Electronic Journal* doi:10.2139/ssrn.3205040

Teng-Calleja, M., Hechanova, M. R. M., Sabile, P. R., et al. (2020). Building organization and employee resilience in disaster contexts. *International Journal of Workplace Health Management, 13*(4), 393-411 doi:10.1108/ijwhm-09-2019-0122

Tonkin, K., Malinen, S., Näswall, K., et al. (2018). Building employee resilience through wellbeing in organizations. *Human Resource Development Quarterly, 29*(2), 107-124 doi:10.1002/hrdq.21306

Vuong, B. N., and Sid, S. (2020). The impact of human resource management practices on employee engagement and moderating role of gender and marital status: An evidence from the Vietnamese banking industry. *Management Science Letters*, 1633-1648 doi:10.5267/j.msl.2019.12.003

Wahid, N. A., Ishak, M., Yunus, N. K. M., et al. (2014). *An Empirical Study on Determining the Firm Performance and Human Resource Practices among SMEs in Food Industry in Jengka and Maran, Pahang.* Paper presented at the International Conference on Human Resource Management and Organization Effectiveness In Asia Pacific, Kota Kinabalu, Malaysia.

Wang, C. J., and Yang, I. H. (2021). Why and How Does Empowering Leadership Promote Proactive Work Behavior? An Examination with a Serial Mediation Model among Hotel Employees. *Int J Environ Res Public Health, 18*(5) doi:10.3390/ijerph18052386

Wang, X., and Shaheryar. (2020). Work-Related Flow: The Development of a Theoretical Framework Based on the High Involvement HRM Practices With Mediating Role of Affective Commitment

and Moderating Effect of Emotional Intelligence. *Front Psychol, 11*, 564444 doi:10.3389/fpsyg.2020.564444

World-Bank-Group. (2020). *Arab Republic of Egypt Digital Economy: Country Assessment.* Retrieved from Washington, D.C.:

Wut, T. M., Lee, S. W., and Xu, J. B. (2022). Role of Organizational Resilience and Psychological Resilience in the Workplace-Internal Stakeholder Perspective. *Int J Environ Res Public Health, 19*(18) doi:10.3390/ijerph191811799

Zhai, X., Zhu, C. J., and Zhang, M. M. (2022). Mapping promoting factors and mechanisms of resilience for performance improvement: The role of strategic human resource management systems and psychological empowerment. *Applied Psychology, 72*(3), 915-936 doi:10.1111/apps.12411