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Detrimental Impact of Abusive Leadership on Knowledge Worker's Productivity: Evidence from Higher Education Sector

Abstract

Purpose: Drawing on Nonaka's knowledge-creation theory, this study argues and examines how hampered knowledge sharing decreases knowledge creation and knowledge utilization, which, in turn, mitigates knowledge utilization to inhibit productivity. Accordingly, this study also investigates how knowledge sharing and knowledge creation mediate between the impact of abusive leadership on knowledge utilization to hamper knowledge-worker productivity.

Methodology: We collected data from 263 faculty members across Higher Education Institutions in Pakistan. Non-response data bias was analyzed using paired t-test in SPSS, and a latent common method factor approach was utilized to diminish common method bias. The study tested hypotheses through Structural Equation Modeling (SEM) in AMOS. The Confirmatory Factor Analysis (CFA) method was employed to test the reliability and validity of the instrument.

Results: The results revealed that abusive supervision impedes knowledge utilization directly and indirectly via knowledge creation and sharing, decreasing knowledge-worker productivity.

Originality: Through Drucker's knowledge-worker productivity, this study delves into mechanisms on how abusive leadership directly mitigates knowledge utilization, leading to hampered knowledge-worker productivity. We further contribute to the knowledge-management literature through Nonaka's theory of how knowledge sharing, and creation mediate the negative relationship between abusive leadership and knowledge utilization, leading to hampered knowledge-worker productivity.

Implications: In terms of theoretical implications, we highlight for future research to examine the interrelationship between the knowledge-management process when analyzing the determinants (e.g., abusive supervision herein) of knowledge-sharing. In terms of practical implications, the study suggests the need for effective supervisor-subordinate communication and

relevant organizational policies to prevent abusive supervision through training to foster a positive work environment.

Keywords: Abusive leadership, Higher Education, abusive supervision, knowledge-worker productivity, knowledge management, knowledge creation, knowledge sharing, knowledge utilization.

1. Introduction

The productivity of knowledge workers is crucial for organizational innovation and performance (Sumbal et al., 2024; Khaksar et al., 2023; Shujahat et al., 2019). This is because a significant portion of occupations nowadays comprises knowledge workers in developed and emerging markets because of the predominant existence of knowledge work (Sahibzada et al., 2022; Ahmed et al., 2021). Knowledge work refers to the unstructured and intellectual/cognitive tasks that require innovation. Examples include teaching and researching in higher education institutions (HEI), software development, medical experiments and drug development etc. This knowledge work is executed through three processes, knowledge creation, sharing, and utilization. Knowledge workers perform the knowledge work by engaging in these three processes to enhance their productivity. Consequently, knowledge workers refer to workers who utilize the created and shared knowledge to improve productivity (Nezafati et al., 2023). Faculty members in HEIs are renowned knowledge workers because they continuously create, acquire, share, and utilize knowledge as part of their research, teaching, and administrative responsibilities (Kianto et al., 2019).

There is an ongoing interest, but limited understanding of how counterproductive leadership behaviours determine knowledge worker productivity in emerging markets (Sumbal et al., 2024; Ahmed et al., 2021). Effective leadership stimulates knowledge workers to create, share, and utilize knowledge to improve productivity. Abusive leadership is one of the essential but counterproductive managerial or human resource practices. It refers to the leadership at the workplace, which is marked with bitterness, aggression, and hostile behaviour without posing physical harm to the employee or subordinate (Santos et al., 2023). In this vein, a notable study by Ahmed et al. (2021) found that abusive leadership directly hampers knowledge creation, sharing, and utilization, individually, to hamper knowledge worker productivity. Consequently,

they suggest that (i) three knowledge management processes – knowledge creation, sharing, and utilization – enhance productivity; (ii) mediate between abusive leadership and knowledge-worker productivity. Nevertheless, Nonaka's organizational knowledge creation theory and knowledge-worker productivity literature suggest that while abusive leadership directly hampers knowledge utilization to decrease knowledge-worker productivity. It does so indirectly via the mediating effects of knowledge creation and sharing.

Drawing on the knowledge worker productivity theory, the literature highlights the knowledge utilization as the core process affecting productivity of knowledge workers. Consequently, abusive leadership hampers knowledge utilization and decreases productivity. In this vein, Nonaka's organizational knowledge creation theory (Nonaka, 1994) suggests that workers create, and colleagues share plenty of innovative knowledge. Nonetheless, created or shared pieces of knowledge impact productivity when workers utilize them. According to previous research, each component of the knowledge management process individually improves the knowledge worker productivity in isolation. Whereas knowledge utilization, supported and supplemented by knowledge creation and sharing, has been empirically proven to be the primary driver of improving the productivity of the knowledge worker, in the emerging economy of Pakistan (Umer et al., 2023).

Nonaka's theory further suggests that knowledge creation and sharing are the two processes that determine the knowledge available for utilization. First, knowledge workers use shared knowledge from colleagues to create new knowledge that is idiosyncratic in their job. Consequently, the worker makes use of the created knowledge to improve productivity. Second, knowledge workers create knowledge based on their existing expertise to have sufficient knowledge for work productivity. Knowledge sharing creates the intellectual capital to sustain the competitive advantage in emerging markets, ultimately reducing costs, improving innovative capabilities, and enhancing performance (Perotti et al., 2022; Ullah et al., 2022). The continuous increasing competition and the need of innovative performance in the educational landscape, the productivity of the knowledge worker has been marked critical (Sahibzada et al., 2022). HEIs have the pressure to contribute to impactful research and product quality graduates, specifically in the emerging markets like Pakistan (Shahid et al., 2024). However, the supervision when abusive can severely damage undermining the efforts leading to obstruction in the knowledge management processes (Ahmed et al., 2021). Understanding of these dynamics is not only important to enhance

the performance in academia but to promote a positive work environment nurturing creativity and collaboration among the members.

Abusive supervision not only undermines morale of the individuals but also disrupts collaborative knowledge processes (Ahmed et al., 2021) such as knowledge sharing (Santos et al., 2023) and contributes towards knowledge hiding behaviour (Anand et al., 2024) leading to decreased productivity of employees (Lanre-Babalola et al., 2024). Although knowledge management processes have been recognized in enhancing productivity, but research lacks the exploration of abusive supervision affecting knowledge management processes within Higher Education Institutions (HEIs) in emerging markets. Past research extensively examined the impact of abusive supervision on the knowledge hiding processes (Anand et al. 2024; Hao et al., 2022; Farooq & Sultana, 2021) mainly in large corporations overlooking the unique dynamics of HEIs particularly in developing economies context. Furthermore, most of the research examining the impact of knowledge management systems on organizational performance has been concentrated on large companies, disregarding its use in Higher Education Institutions (HEIs) as knowledge-driven organizations. Nevertheless, the existing literature on abusive leadership and knowledge worker productivity, including the study by Ahmed et al. (2021) and Sumbal et al., (2024), is limited in its ability to address these mechanisms or nuances of Nonaka's theory. The objective of the research is:

"To investigate how knowledge sharing and knowledge creation mediate the effects of abusive supervision on knowledge utilization, thereby impacting knowledge worker productivity in Higher Education Institutions".

Consequently, we address the following research question (RQ).

RQ: How do knowledge sharing and knowledge creation mediate between abusive supervision and knowledge utilization to hamper knowledge-worker productivity?

The study aims to explore the impact of abusive supervision on knowledge worker productivity, specifically in Higher Education Institutions (HEIs) in emerging markets, such as Pakistan. Drawing on Drucker's theory of knowledge worker productivity and Nonaka's

organizational knowledge creation theory, the research can provide insight into how abusive supervision influences the knowledge management process which ultimately hinders knowledge worker productivity in the knowledge-intensive organizations. We make three theoretical contributions to the abusive leadership and knowledge management literature in emerging markets. First, we contribute to the knowledge-management literature in emerging economies (Ahmed et al., 2021) on how abusive leadership hampers knowledge-worker productivity. Through Drucker's knowledge-worker productivity, we indicate how abusive leadership directly mitigates knowledge utilization, leading to hampered knowledge-worker productivity. Second, we contribute to the knowledge-management literature through Nonaka's theory of how knowledge sharing, and creation mediate the negative relationship between abusive leadership and knowledge utilization, leading to hampered knowledge-worker productivity. Finally, we contribute to how abusive leadership in the emerging market hampers knowledge-management processes and knowledge-worker productivity.

We conducted our study on knowledge workers in Pakistani HEIs. The Pakistani HEI sector and faculty members have shown more significant research and teaching productivity, for example, as per the recent QS and Times Higher Education rankings. Previously, the knowledge management processes in research-intensive institutions have been proven to help in the enhancement of academic efficacy and ranking, research quality and output, and the number of graduates, ultimately improving the productivity level in emerging economies, i.e., China and Pakistan (Sahibzada et al., 2021). Emerging markets are continuously interested in implementing knowledge management processes to improve faculty productivity. We implicate the emerging markets that they develop the mechanisms to control abusive leadership practices, cultivating and fostering knowledge management processes, leading to the firm and market growth.

2. Theoretical background and Hypothesis development

2.1 Abusive supervision and knowledge management processes

Abusive supervision refers to the behaviour and attitude towards a subordinate that is offensive, aggressive, and hostile without physical harm (Ahmed et al., 2021). Behaviour conducted in such a manner includes using rough and harsh language, sometimes also consisting of bullying the subordinate publicly or privately (Quinn et al., 2024). When considering various

types of leadership, abusive supervision is one of the most damaging aspects influencing the efficiency of overall performance. As well as it also influences the reactionary behaviour of the employee (Cai et al.,2024). As per past research, the results show that subordinates working in any organization are facing this problem (Ahmed et al., 2021). Thus, much research has been limited to addressing abusive supervision which alleviates the employees' knowledge resources in an organization (Wu & Hu, 2009). Some other adverse effects of abusive supervision on employees are the production of stress. The stress can then result in poor performance while dealing with knowledge management processes (Kaur & Mittal,2024) such as sharing, creating, and applying knowledge.

In a social environment, people are accustomed to sharing knowledge and skills with employees in an organization with an interactive culture (Khaksar et al., 2023). Similarly, knowledge sharing is conducted when the employees are willing to attain their organizational goals (Ullah et al., 2022). For this purpose, they start using and reusing previously available knowledge, creating new knowledge developed in the organization. Abusive supervision negatively affects the process of knowledge sharing (Anand et al., 2024; Santos et al., 2023). Workers that experience abusive supervision deliberately withhold and hide the information from other subordinates (Ahmed & Mohammad Makhbul,2024). Such behaviour may be primary due to aggressive behaviours from the side of the supervisor and corresponding organisational climate. The negative consequences that come with it can hinder from an organisation's learning capability and performance (Anand et al.,2024). Likewise, after such an experience a subordinate face, the most probable reaction is the limited sharing of knowledge (Choi et al., 2019). Research also indicates a negative relationship between abusive supervision and knowledge sharing in different organizational contexts by academic staff in knowledge-intensive organizations (Bashir et al., 2021).

Knowledge creation enhances learning and is considered one of the most crucial aspects of an organization. Previously, researchers defined knowledge as devising a new concept or creating a new product (Kianto et al., 2016). However, the linkage between abusive supervision and knowledge creation is still under-researched except Ahmed et al. (2021). In many cases, knowledge creation can be an enabling factor to enhance productivity and improve novelty. However, this hard work can be overshadowed by stress as a reactionary element of this destructive

behaviour. Such an environment can suppress and hinder the ability of the knowledge worker to engage in knowledge-intensive activities, which can also hamper employees' creativity. According to social exchange theory, abusive supervision can cause fewer interactions and exchanges of innovative ideas to create new knowledge in knowledge-intensive organizations (Kim et al., 2015).

New knowledge created or transferred by knowledge workers to attain greater productivity is basically empowered through knowledge utilization (Teo & Bhattacherjee, 2014). Previous research indicates that different leadership styles impact knowledge utilization, e.g., transformation leadership (Gelard et al., 2014). Apart from other organizational factors which are essential for the effective and efficient running of knowledge management processes (Sahibzada et al., 2022), leadership can be considered the vital factor in devising a progressive strategy for the knowledge workers. As the leader is solely responsible for devising such an environment for the knowledge workers to perform knowledge management activities including knowledge creation, sharing, utilization, application, etc., (Sahibzada et al., 2022). Specifically, when the employees feel abusive supervision, their willingness to apply their knowledge expeditiously will have decreased (Zampetakis,2024). The hostile work environment demotivates them to be committed and engage in the use of knowledge for changes that would benefit organizational process and outcomes (Tufail et al.,2024). Moreover, because abusive supervision has negative effects on stress and anxiety of the employees, the efficiency of their cognitive function may be reduced. This inefficiency makes it impossible to apply effectively the available knowledge they possess (Li et al.,2024). Zaim et al. (2018) proposed that leadership can significantly impact knowledge-related activities. For instance, knowledge utilization, by lowering the motivation level of the employees in using the shared knowledge.

2.3 Interrelationships between knowledge management processes from Nonaka's organizational Knowledge Creation Theory perspective

According to the organizational knowledge creation theory, the fundamental purpose of any organization is to create knowledge through sharing and then applying it in relevant contexts to attain competitive advantage (Nonaka, 1994). The knowledge management process comprises knowledge sharing, creation, and utilization (Umer et al., 2023; Shujahat et al., 2019; Kianto et al., 2019). Knowledge sharing is capturing and moving knowledge from one source to another.

For example, sharing knowledge among employees to perform tasks (Nezafati et al., 2023). The knowledge creation process continuously involves producing new knowledge for the organization (Nonaka et al., 2000). Finally, knowledge utilization is using existing knowledge in the organization to generate innovative ideas and products (knowledge creation) for sustainable competitive advantage (Umer et al., 2023; Kianto et al., 2019).

Nonaka (1994) claims that knowledge cannot be utilized unless shared. Hence, the processes are dependent upon one another. The SECI model (figure. 2) demonstrates the dependence of these processes such that the process of knowledge creation begins with socialization (exchange of knowledge between the people) (Nonaka, 1994). According to organizational knowledge creation theory (Nonaka & Takeuchi, 1995; Nonaka, 1994), “ba" is the essential element of the SECI model, which specifies the context in which knowledge sharing, creation, and utilization occur. “Ba” can be the physical or a virtual place of interaction among the knowledge workers. The application of the SECI model is indispensable to enhance the productivity of an organization (Kianto et al., 2019).

Insert Figure 1 here.

Nonaka et al. (2000) stated that knowledge is created when different stakeholders interact/socialize (share knowledge) in an environment influenced by different enabling factors and constraints. According to the knowledge creation theory, the knowledge creation process cannot start without knowledge sharing or the socialization mechanism in an organization (Nonaka, 1994). Knowledge sharing can lead to creating new knowledge through interactions among individuals. In the context of HEIs, the knowledge creation is fundament and the interlink between knowledge sharing and creation is imperative. The culture of knowledge sharing, and continuous learning and innovation drives academic excellence through knowledge creation, (Basit et al., 2024), hence;

H1: There is a positive association between knowledge sharing and knowledge creation.

The relationship between knowledge sharing and knowledge utilization has been studied several times, directly or indirectly. Both processes were studied side by side for the better performance of the organization and to sustain the knowledge management process (Umer et al.,

2023). The theory of organizational knowledge creation explains that until tacit knowledge is shared, the cycle will not start inhibiting knowledge generation and, thus, knowledge utilization (Nonaka, 1994). In Higher Education Institutions (HEIs), the symbiotic relationship between knowledge sharing and utilization is crucial to enhance the overall productivity. To drive innovation and inculcate academic growth a dynamic learning environment should be maintained. This environment can be inculcated through effective knowledge sharing and then utilization for continuous learning (Farooq et al., 2023). So, we hypothesize that:

H2: There is a positive association between knowledge sharing and knowledge utilization.

Both knowledge creation and utilization can be considered essential in the vital operations in a knowledge-intensive organization to engage in knowledge-related innovative tasks. Knowledge creation explores knowledge in an organization. Whereas knowledge utilization exploits that knowledge to produce creative ideas and products. Knowledge creation includes all the steps in generating new knowledge, from discovering the resources to integrating the ideas (Nonaka et al., 2006). Moreover, knowledge creation also involves the development of creative ideas and practices to follow (Nonaka, 1994). This newly created knowledge is then used for further utilization in the organization. This aspect explains that knowledge utilization transforms knowledge into the products and services the organization offers. The interplay between knowledge creation and utilization is fundamental to facilitate innovation in HEIs. Knowledge creation is exploring new avenues of ideas and practices to the academic growth and research development. This aspect is ultimately harnessed by knowledge utilization practices to shape the institutions' strategic direction (Rehman & Iqbal, 2020). Based on this discussion, we hypothesize that:

H3: Knowledge creation positively leads to knowledge utilization.

2.4 ***Knowledge Utilization and Knowledge-worker Productivity***

The knowledge management process includes the flow of knowledge from knowledge creation to utilization (Shujahat et al., 2021). Knowledge creation and utilization are considered essential contributors to the productivity of knowledge workers. In contrast, knowledge utilization

is comparatively the most vital element because even the most brilliant ideas, if not applied effectively, cannot impact performance and productivity in the organization (Umer et al., 2023). As per Nonaka's theory (Nonaka, 1994), knowledge sharing does not directly impact knowledge-worker productivity. As shared knowledge must be applied to produce output, or it can be used to create new knowledge that, in turn, can be used with increased productivity (Kianto et al., 2019). In HEIs, knowledge management practices can be helpful in the initiation and effectiveness of research and development-related activities (Shahid et al., 2024). These practices can enhance the overall performance and productivity of the organization (Sahibzada et al., 2022). Previous research has supported this proposition by demonstrating a positive relationship between knowledge utilization and knowledge-worker productivity in diverse organizational contexts, including knowledge-intensive organizations (Umer et al., 2023; Kianto et al., 2018). Hence, we hypothesize:

H4: Knowledge utilization positively impacts knowledge-worker productivity.

2.5 ***Mediating role of knowledge-management processes between abusive supervision and knowledge-worker productivity***

If a knowledge worker faces destructive supervisory behaviour, he/she tends to transfer the behaviour to others by withholding knowledge and curbing the process of knowledge creation (Manaa, 2022; Khalid et al., 2018). Past research has shown that deteriorating leadership behaviour is an obstructing factor in knowledge related behaviour, ultimately hindering the productivity of knowledge workers (Lanre-Babalola et al., 2024). Knowledge creation theory postulates that the environment of the knowledge worker matters a lot in the process of creating new knowledge. The leader plays a key role in significantly impacting performance (Nonaka et al., 2006). Abusive supervision can create a toxic work environment which can significantly hinder the sharing and creation of the knowledge which is vital for the productivity of the knowledge workers (Sumbal et al., 2024; Ahmed et al., 2021). When the employees are supervised in such a hostile behaviour their psychological safety is compromised resulting in emotional distress. This distress can make the employee reluctant to share knowledge or collaborate with peers (Yang et al., 2023). In such cases, employees are afraid of negative judgements from the supervisors for their contributions. This withdrawal from sharing knowledge among the team member not only halts the creativity but

also overall productivity of the team (Sumbal et al., 2024). Likewise, the lack of trust can impede the brainstorming and innovation, creating a culture of silence. In this culture, the knowledge workers focus on self-preservation rather on the organizational goal, ultimately impeding the creation of new knowledge (Wang et al., 2024). As the organizations miss out the synergies arising from the knowledge creation and sharing, the overall productivity of the knowledge workers also decreases.

H5 is based on the concept that abusive supervision may negatively impact knowledge sharing, creation, and utilization, decreasing knowledge-worker productivity. Prior research indicates that abusive supervision can hinder employees' willingness to engage in knowledge-related behaviour (Bashir et al., 2021), impairing sequential knowledge-related activities. To analyze the overall effect of abusive supervision on knowledge-worker productivity through knowledge sharing, creation, and utilization, we hypothesize:

H5: Knowledge sharing, knowledge creation, and knowledge utilization sequentially mediate the negative relationship between abusive supervision and knowledge-worker productivity.

Insert Figure 2 here.

3. Methodology

3.1 Research Context and Sampling Strategy

The study focused on the knowledge workers working in HEIs of Pakistan. In this knowledge economy age, educational institutions depend on research and developmental activities that initiate novel ideas to enhance overall productivity and rankings (Iqbal et al., 2019). The knowledge workers were defined as academic and professional/managerial employees who had acquired formal education for at least 16 years, used their intellectual capabilities and knowledge assets to complete knowledge-intensive tasks, and occupied key posts in an organization (Kianto et al., 2019). The sample included faculty members such as professors, associate professors, assistant professors, lecturers, and managerial staff from the academic sector. Thus, the knowledge workers were faculty members and higher managerial staff from the academic sector. The demographic detail was gathered providing insights. The details regarding the demographics were gathered to enhance the insights into the representativeness of the sample. The diversity of the experiences among the participants was highlighted through documentation of the distribution across various faculty members and the institution types (public/private). The study is quantitative based upon convenience sampling, due to its practical assessment in a specific population set within the target market (HEIs). This strategy assists in gathering of data from the target market who are available and willing to contribute as well. Moreover, it is acknowledged that the sampling method limit the generalizability of the results. It also assists in efficient data collection from the from readily available participants. Although the sampling technique doesn't ensure generalizability, so to address the concern of bias, the study included diverse HEIs across both public and private sectors. This practice is helpful in achieving enhanced breadth of perspectives. Furthermore, the data collected for the study represents the views of significant number of the faculty members, providing valuable insights (Abbas & Khan, 2023). The reasons behind the choice of the academic sector are as follows:

Firstly, academic personnel are linked with knowledge-intensive tasks, including knowledge management processes, e.g., knowledge sharing and creation, and later, they are utilized to enhance learning behaviour by building practical knowledge bases between each other. Hence, it is a knowledge-intensive sector that is totally reliant upon innovative research and

developmental activities (Paudel, 2020). Secondly, the HEIs play a crucial role in building a knowledge-intensive society by engaging their knowledge workers in innovative tasks, including research and development, and providing a rich environment for knowledge generation and utilization in the advancement of technologies, to attain workforce efficiency in research tasks and assignments to attain overall higher organizational productivity (Iqbal et al., 2019). Thirdly, in developing economies, there is often a compromise over the quality of education because of less or a restricted number of resources and a lack of practical and supportive leadership skills. The support of leadership in a knowledge-intensive organization is a significant and crucial factor in promoting knowledge-based activities in the academic sector, which also contributed to the choice of this target population (Fullwood & Rowley, 2017). Fourthly, the academic staff in the HEIs play a critical role in the knowledge management processes through their interactions and collaboration providing valuable insights to enhance the productivity and overall learning outcomes. Lastly, the external and internal environment plays an important role. It can be considered the main element when the performance of a knowledge worker is impacted to maintain and sustain an overall competitive advantage in developing economies. Moreover, academic institutions are engaged in the improvement of educational practices, so the introduction of a knowledge management process in such a context can enhance teaching strategies and experience (Khaksar et al., 2023). Both the internal and external environment play a vital role in maintaining a sustainable competitive advantage in emerging economies. In the same way, the focus on research and development in the HEIs inculcate a culture of continuous learning and development for the professional growth of both the faculty members and institutional development (Paudel, 2020; Iqbal et al., 2019).

3.2 Data Collection and Measures

The research design is conducted in "cross-sectional time horizon" during which, 450 self-administered questionnaires were circulated among faculty members and managerial staff in HEIs of Pakistan, both public and private universities in the year 2021 and 2022. These questionnaires were delivered in physical and digital forms to accommodate the maximum convenient participation of the respondents. The participants were asked to complete and return the forms in a set period. Due to the ongoing pandemic scenario, 263 responses were received, which was also the final sample size. To proactively control any common method bias issue, we followed Chang et al.(2020) ex-ante best practices, such as randomized items. We detail the ex-post tests in the

results section. Although the sample size is relatively low, it is based on the recommendations of Krejcie and Morgan (1970). Previous studies on the sample size indicate that ten observations for each variable are sufficient, which supports the present sample size (Cappa et al., 2021). The questionnaire included all the items based on the existing scale and literature.

Moreover, some variables were controlled, i.e., gender, education, and position, which were consistent with previous studies (Shujahat et al., 2019). The participants were assured regarding the anonymity and confidentiality of data. The research study ensured the privacy and anonymity of the participants by adhering to voluntary participation and ethical considerations. The research participants were fully informed regarding the purpose and procedure of the study.

As the study was based on self-reported data so the key limitations may be, response bias (presenting socially desirable response instead of true feeling impacting sensitive issues), recall bias (participants' memory recall of past experiences can compromise the data leading to inaccuracies), participants interpretations (participants variable interpretations of the survey items or the Likert scale leading to inconsistent responses) and common method bias (Kmieciak, 2021). The study proactively mitigated or controlled for the non-response bias and common method bias. The study ensured that the respondents would be anonymous, encouraging the response rate. The content validity of the survey instrument was ensured through pilot testing it on a panel of knowledge-management research members. We ensure semantic validity and effective communicability of potential respondents through a panel comprised of faculty members who were not in the knowledge-management field. To proactively mitigate the non-response bias, respondents were reminded, follow-ups and emails were sent, and compliance rate was checked regularly. The screening and cleaning helped in identifying the outliers and discrepancies in the collected data. The variables' items were measured using a 5-point Likert scale, from 1 as "strongly agree" to 5 as "strongly disagree." The scales for this study are based on established reliability and validity in the past research studies (Sumbal et al., 2024; Ahmed et al., 2021; Tariq & Ding, 2018). These scales are recognized to measure the constructs related to knowledge management and organizational behaviour providing a base for the current study. The measures used for the variables are as follows: (Please see Appendix for details).

i) Knowledge-worker productivity (KWP)

The "Smart WoW–constructing a tool for knowledge work performance analysis" was chosen to measure knowledge worker productivity. It is a seven-item scale developed by Palvalin et al. (2015). The variable is measured on a Likert scale from 1, denoting strongly disagree, to 5, mentioning strongly agree. Cronbach's value for this scale is $\alpha = 0.97$ for measurement scale reliability or consistency.

ii) Knowledge Utilization (KU)

This is a 3-item scale adapted from Zaim et al. (2007) on a Likert scale, with 1: strongly disagree and 5: strongly agree. Cronbach's α is 0.95 for this scale.

iii) Knowledge sharing and Knowledge Creation (KS and KC)

The Organizational Renewal Capability Inventory survey (Kianto et al., 2016) was adapted to measure knowledge creation and knowledge sharing. It is based on a Likert scale of 1: strongly disagree and 5: strongly agree. Cronbach's α for knowledge creation is 0.97, and for knowledge sharing, it is 0.95.

iv) Abusive Supervision (AS)

For abusive supervision, the study uses a 5-items scale which is also called as "active-aggressive abusive supervision" by Mitchell & Ambrose (2007) based on the Likert scale from 1 to 5, as 1: strongly disagree and 5: strongly agree). It has been used by previous studies (Sumbal et al., 2024; Ahmed et al., 2021; Baig & Riaz, 2021; Priesemuth et al., 2014). The Cronbach's α is 0.96 for this scale.

3.3 Data Analysis

The Covariance based Structural Equation Modeling (CB-SEM) technique was used in AMOS software to test the proposed hypothesis. The data was analysed to test the direct and indirect effects (mediation effect). For the mediation effect, the Preacher and Hayes method was used in AMOS v.26 to test the hypotheses. 5000 bootstrap is used along with a 95% bias-corrected confidence interval for more robust indirect effects, as it helps in the estimation of the distribution of statistics when the actual sampling distribution is unknown. The reason for choosing this

analytical strategy is based on the study's objectives, the nature of the research data, and the hypotheses being tested (Lopes et al., 2023).

4. Results

4.1 Correlation Coefficients, Descriptive and Reliability Statistics

The means, S.D. (standard deviation), and the reliability of data are shown in Table I(A). The internal consistency of the variables is analyzed through the scores of Cronbach's alphas. The scores for abusive supervision were 0.96, knowledge sharing was 0.95, knowledge creation was 0.97, knowledge utilization was 0.95, and knowledge-worker productivity was 0.97. These scores depict the consistency and reliability of data. The variable, abusive supervision, negatively and significantly impacted knowledge sharing ($r= -0.820$, $p<0.01$), knowledge creation ($r=-0.919$, $p<0.01$) and knowledge utilization ($r=-0.903$, $p<0.01$). Knowledge sharing positively impacted knowledge creation ($r=0.876$, $p<0.01$) and knowledge utilization ($r=0.856$, $p <0.01$). In the same way, knowledge utilization has a positive linkage with knowledge-worker productivity ($r=0.923$, $p<0.01$). The mean and standard deviation values in the table also indicate that the data is normally distributed.

Insert Table I(A) here

4.2 Nonresponse and Common Method Bias

A comparative study was conducted using a paired t-test in the SPSS software to assess the potential impact of non-response data bias. The analysis compared the responses of participants who responded early with those who responded late. More precisely, the first group of 50 answers was compared to the last 50 answers in the dataset. The findings revealed no statistically significant disparity between the initial 50 individuals who responded early and the final 50 who responded late. This suggests that there is no presence of this particular bias, as reported by Greco et al. (2015).

The common method bias was checked by comparing the five factors model with other models (Podsakoff et al., 2003) (See Table II). It occurs when data from both independent and dependent variables is collected from the same source and used later, resulting in potential errors and biases in the results. To resolve the issue with the help of controlling and detecting common source bias, there are several tests, including Harman's single factor test, which examines whether a single factor accounts for a majority of the variance in the data, and the marker variable technique, the full collinearity test, and the latent common method factor approach (Podsakoff et al., 2013).In the present study, the latent common method factor approach is used to control for common source bias, involving adding a common method factor to the final measurement model and capturing the effects of common source bias on the complete variable list. The results showed that the test did not significantly impact the research results, which means there is no common method bias in the study.

4.3 Collinearity Statistics

The relationship between predictor factors and data check biasness is demonstrated by collinearity. Tolerance and the variance inflation factor (VIF) are used to identify it. Tolerance is discovered by dividing the VIF value by one (1/VIF). VIF should be used in the range of 1 to 10 (Ringle et al., 2015). However, tolerance values less than 0.10 may cause significant multicollinearity problems (Weisburd and Britt, 2014). Table I (B) demonstrates that there is no multicollinearity problem because all variables fall within the recommended range.

Insert Table I(B)

4.4 *Confirmatory Factor Analysis*

The distinctiveness prevailing among the variables involved in the model was tested and analyzed through "Confirmatory factor analysis" through the usage of AMOS v.26.The previous studies show the standardized values for CFA, "0.05< RMESA >0.10 (MacCallum et al., 1996), CFI, NFI, GFI, IFI < 0.09" (Hooper et al., 2008). Table II (A) shows the results of the baseline model, which are RMSEA: 0.081; CFI: 0.951, NNFI: 0.924, GFI: 0.800, and IFI: 0.951.

Insert Table II (A) here

4.5 Convergent Validity and Reliability

Table II(B) below illustrates the standardized variables estimates in its Confirmatory Factor Analysis (CFA). Cua et al. (2001) said that a construct with factor loadings exceeding 0.5 is deemed to be practically significant. Items with factor loadings above 0.5 were included as they are considered practically significant. According to Fornell and Larcker (1981), a reliable guideline is that an Average Variance Extracted (AVE) value of 0.5 or above suggests sufficient convergent validity. The data indicates that the AVE value over 0.50 confirms its validity. A generally accepted guideline for estimating composite reliability (CR) is that 0.7 or higher indicates good reliability (Netemeyer et al., 2003). The data indicates that a CR score above 0.70 signifies the reliability of the data. The Cronbach alpha scores provided above indicate the internal consistency or reliability of each item in the questionnaire. The minimum threshold for determining the acceptability of reliability is set at ≥ 0.70, as stated by Nunnally in 1978. The data indicates that the Cronbach alpha value exceeding 0.70 signifies the reliability of the data.

Insert Table II (B) here.

4.6 Discriminant validity

Table II(C) displays the Heterotrait-Monotrait Ratio (HTMT), providing discriminant validity evidence. This study's results validate the validity of our variables, as all HTMT values obtained are below 0.90 (Henseler et al., 2015), indicating discriminant validity in our data.

Insert Table II (C) here.

4.7 Hypotheses Testing

The following table III portrays the results of the direct effects of the variables that test the hypotheses established in the study. In line with the hypothesis, The H1 has also been proved that knowledge sharing positively and significantly impacts knowledge creation (b = 0.434, SE = 0.041, 95% CI [0.352, 0.516]). The results indicate that when knowledge workers engage in sharing knowledge, it fosters an innovative environment facilitating creation of new ideas and knowledge. In the same way, the study proves hypothesis 2, as knowledge sharing has a positive significant impact on knowledge utilization (b = 0.188, SE = 0.052, 95% CI [0.086, 0.291]). The

results implies that effective sharing of knowledge lead to utilization of knowledge ultimately enhancing the performance. The study proves hypothesis 3, as knowledge creation is significantly positively related to knowledge utilization (b = 0.535, SE = 0.065, 95% CI [0.406, 0.663]). This finding reflects that the generation of new knowledge directly facilitates its effective usage within the organization.

Further, Knowledge Utilization also poses a significant direct impact on knowledge-worker productivity, validating the hypothesis 4 (b=0.284, SE=0.055, 95% CI [0.174, 0.394]. This result underscores the vital importance of knowledge utilization ultimately enhancing the productivity of the knowledge worker. Finally, as per the indirect path result, abusive supervision can lead to negative knowledge-worker productivity through knowledge sharing (b = -0.0988, SE = 0.0377, 95% CI [-0.1779, -0.0304]), knowledge creation, (b = -0.1740, SE = 0.518, 95% CI [-0.2877, -0.0820]) and knowledge utilization, (b = -0.0821, SE = 0.0297, 95% CI [-0.1505, -0.0344]), whereas the indirect path of AS to KWP, through KS and KC (b = -0.0753, SE = 0.0217, 95% CI [-0.1204, -0.0362] and through KS and KU (b = -0.0303, SE = 0.0145, 95% CI [-0.0648, -0.0084]), the indirect path AS to KWP through KC and KU(b=-0.786, SE= 0.0232, 95% CI[-0.1264,-0.0350], which proves hypothesis 5 for the study as the indirect path of abusive supervision to KWP through KS, KC and KU is significantly negative (b = -0.0340, SE = 0.0109, 95% CI [-0.0558, -0.0138]). These findings reflect that if the supervision is abusive, it not only undermines the knowledge worker productivity but also limits the ability to create, share, and utilize it as well.

Insert Table III here.

Insert Table IV here

5. Discussion

Using Nonaka's and Drucker's theories and data from 263 academics in Pakistan's emerging market HEIs, the current study revealed there are various mechanisms of knowledge

management processes through which abusive leadership hampers knowledge workers' productivity rather than only directly through the mediating role of knowledge sharing. Drawing on Drucker's knowledge-worker productivity, we indicate how abusive leadership directly hampers knowledge utilization to decrease productivity. Our results are in line with Ahmed et al. (2021), highlighting the abusive behaviour of the leaders, such as harassing, intimidating, and bullying the subordinates, impacting the usage of knowledge negatively, which ultimately hinders the ability to accomplish the goals, hampering the commitment of the knowledge workers to their productivity (Khaksar et al., 2023). Abusive supervision fosters an unpleasant work environment preventing the exchange of knowledge, obstructing teamwork, and lowering the predacity level in the organization (Santos et al., 2023; Manaa, 2022; Ahmed et al., 2021). These findings align with the prior research by Kaur & Mittal (2024), indicating the negative impact of abusive supervision on the knowledge sharing and utilization by creating an environment of fear among in the organization.

Through Nonaka's theory, we indicate the varieties of knowledge creation and sharing mechanisms through which abusive leadership hampers knowledge utilization to decrease knowledge-worker productivity. We find that abusive leadership hampers knowledge utilization through knowledge sharing and creation, individually and serially (Figure 2). Ahmed et al. (2021) indicated that three knowledge management processes mediate between abusive leadership and knowledge-worker productivity. The study described the phenomenon of hindrance to creating new knowledge by introducing the environment of fear and mistrust. When the subordinates face abusive behaviour, they may be less likely to search for new knowledge or seek innovative information (Manaa, 2022). Therefore, abusive leaders curb knowledge-sharing behaviour (Islam et al., 2021), inhibiting curiosity by creating a hostile environment which ultimately hampers knowledge sharing and negatively impacts the knowledge worker's productivity. Hence, when the knowledge is not shared appropriately in the hostile climate of abusive supervision, it undermines the autonomy and decision-making power of the employee, ultimately hindering the knowledge application. Therefore, it can be said that abusive supervisors limit the power of employees to create, share, apply, and utilize knowledge, resulting in decreased productivity (Ahmed et al., 2021).

The findings of the study reveal a significant positive link between knowledge sharing and knowledge creation among the knowledge worker in the Higher Education Institutions (HEIs) in Pakistan. The result shows that when the knowledge sharing is enhanced in the organizational context it uplifts the knowledge creation as well among the knowledge workers. In the Pakistan HEIs context, knowledge sharing promotes the collaborative culture, by stimulating innovation ultimately enhancing the knowledge creation among the employees. The previous study by Bartol and Srivastava (2022) explained that knowledge sharing is important for knowledge creation thus it enhances innovation, trust, and collaboration in organizations. Further, Carmeli et al. (2013) explained that the utilization of existing knowledge improves the experience and strengthens the capabilities of the staff in the organizations. The implementation of cross-functional collaboration and knowledge sharing can not only improve academic outcomes but also contribute to making the work environment more vibrant and productive (Riyadh et al., 2023). The findings reinforce the mutual reinforcement mechanism between knowledge sharing and knowledge creation in Pakistani HEIs (Basit et al., 2024), supporting H1.

The study supports H2 demonstrating a positive association between knowledge sharing and knowledge utilization among the knowledge workers in Pakistani HEIs. The data denotes that when knowledge sharing is enhanced it ultimately gives an upward push to knowledge utilization. According to Ouakouak and Ouedraogo (2018), sharing knowledge requires work and time. Employees must be somewhat willing to use what has been presented for them to actively participate in this process. However, Han et al. (2010) contend that staff members' information-sharing practices aid in the application and utilization of knowledge. Implementing suitable systems to encourage the sharing of knowledge will lead to more formation and utilization of knowledge in the organization (Ouakouak and Ouedraogo,2018). The results show that HEIs have a culture of open communication, information exchange, and collaboration, in which the knowledge workers can leverage the shared knowledge effectively and efficiently to enhance the decision-making process (Farooq et al., 2023). These knowledge-sharing practices facilitates operational efficiencies and contribute to the productive and innovative work environment.

The findings validate the H3, as the data indicates that active knowledge creation efforts in Pakistani HEIs contribute to enhanced knowledge utilization among the knowledge workers. These findings align with the prior research by Don-Serge (2019), stating that an organization can

only gain a competitive advantage when the cycle of knowledge production is sustained, knowledge must be managed once it is created for the business to continue using it to spark innovation. This claim supports the notion that organizational learning continuously supplies information and frames the knowledge creation as a logical framework for achieving innovation and competitive advantage. The results indicate that when in HEIs the culture that promotes creativity and innovation is fostered it empowers the workforce to effectively utilize the created knowledge in their daily tasks. This aspect highlights the significance of continuous learning through idea generation to enhance and sustain competitive advantage in Pakistani HEIs (Rehman & Iqbal, 2020).

The result of the study supports H4, i.e., there is a positive link between knowledge utilization and knowledge worker productivity in Pakistani HEIs where knowledge workers are encouraged to leverage the available resources to enhance individual and collective productivity. The academic sector can invest in the training and development programs and knowledge management processes to assist the utilization of available knowledge. Corroborating with the earlier studies this aspect maximizes the knowledge worker's potential to drive sustainable growth in the dynamic world (Javed et al., 2024). This study enhances understanding that knowledge utilization is the key knowledge management process that increases the productivity of knowledge work, while the other two knowledge management processes – knowledge creation and knowledge sharing - play supportive roles in it. (Umer et al., 2023), and do not affect the productivity of knowledge workers and other outcomes variables directly (Umer et al., 2023). We thereby give rise to what Kianto et al. (2019) proposed in the vein of Nonaka's organizational knowledge-creation theory (P. 193) in their study on knowledge sharing and knowledge-worker productivity: "The lack of a statistically significant direct association between knowledge sharing and productivity might be because knowledge sharing has an indirect impact on productivity through impacting other knowledge processes (Nonaka & Takeuchi, 1995). Further, this enhanced understanding is also in line with earlier studies, which found that knowledge application mediates between other knowledge management processes and organizational performance outcomes (Ode & Ayavoo, 2020).

Finally, the study affirms the sequential mediation of knowledge management processes, i.e., knowledge sharing, knowledge creation and knowledge utilization on the negative link between abusive supervision and knowledge worker productivity (H5). Reflecting insights from Bahir et

al. (2021), these processes mediate the link between leadership style and the knowledge worker productivity. We contribute to how abusive leadership in the emerging market hampers knowledge-management processes and knowledge-worker productivity. We conducted our studies on knowledge workers in Pakistani HEIs. The Pakistani HEI sector and faculty members have shown greater research and teaching productivity, for example, as per the recent QS and Times Higher Education rankings. Emerging markets are continuously interested in implementing knowledge management processes to improve faculty productivity (Umer et al., 2023). We indicate how emerging markets should develop and implement mechanisms to control abusive leadership practices that would benefit knowledge management processes and lead to firm and market growth. With the help of implementing new mechanisms of controlling abusive supervision will create an inclusive environment, introducing positive collaboration and knowledge-sharing behavior, ultimately improving the overall productivity and effectiveness among the knowledge workers, which can also impact positively and enhance the research outcomes in emerging markets so that it can further help in fostering innovation and leveraging the research capabilities elevating the global academic position ultimately sustaining the economic growth (Sahibzada et al., 2021).

5.1 Theoretical implications

Theoretically, the study adds to leadership literature, specifically abusive supervision and knowledge management. As knowledge is critical for progress and productivity in the academic sector, the study enhances understanding of the deteriorating impact of abusive supervision on knowledge sharing, creation, and utilization and how then the productivity of the knowledge worker is hampered. While previous research studies had identified the relationship of abusive supervision and employees performance (Tepper, 2007), the linkage between abusive supervision and knowledge management is underdeveloped, and this study fills that gap by providing empirical evidence on how abusive supervision can hinder knowledge sharing, curbing the knowledge creation and utilization, which negatively influences knowledge-worker productivity among faculty members in higher education institutions in Pakistan. Specifically in the education sector, it presents important implications for the academic leaders running the HEIs as well as for the academicians (knowledge workers) engaged with HEIs. The stakeholders in HEIs need to curb the issues causing abusive supervision. These findings resonate with the findings from Bashir et al.,

(2021), who states that the abusive supervision hinders the employees to engage in the knowledge related behaviours.

Secondly, this study gives an important input by analysing the mediation process contributed by highlighting the importance of knowledge sharing by which abusive supervision can impact knowledge creation and utilization, reducing knowledge-worker productivity. This `This aspect can provide valuable insights for research practitioners to understand the process of attaining positive outcomes by curbing the destructive impact of abusive supervision in knowledge-intensive organizations such as higher education institutions. This research study extends the framework of Zhan et al., (2018), which emphasized the mitigation of negative leadership impact and maintain supportive work environment for the exchange of knowledge.

5.2 Practical Implications

Academic personnel need to understand the interrelationship and dependence of knowledge sharing, creation, and utilization. No single process can be completed in isolation. As per the knowledge-based view of the firm, an organization creates knowledge collectively, but in the presence of abusive supervision, the knowledge production capability of a firm will become affected, ultimately impacting the sustainability of the competitive advantage (Ahmed et al., 2021). For this purpose, proper supervisor-subordinate communication should be maintained, and the organizational goals and objectives should be conveyed effectively to enable a smooth flow of organizational knowledge processes, from sharing and creation to utilization. It is vital for the management of HEIs to devise and incorporate the relevant policies to avoid abusive supervision in the workplace. Training and development, when initiated among the supervisors, can enhance leadership skills by promoting a healthy work environment.

Overall, this study's findings suggest that HEI management should prioritize the development and implementation of policies and practices to promote a positive work environment, encourage knowledge sharing behaviour to create new knowledge and utilize it later so that management can prevent abusive supervision and enhance the productivity of their knowledge workers (Khaksar et al., 2023).

6. Conclusion

The study is in line with Nonaka's organizational knowledge creation theory by analyzing and examining the linkage between knowledge sharing, creation, and utilization. In this theory, knowledge creation and transfer are emphasized in the organization to attain competitive advantage. The study provides empirical evidence of the positive link between knowledge sharing, creation, and utilization of HEIs in Pakistan. In the same way, this research also complements Drucker's theory of knowledge-worker productivity by analyzing the impact of abusive supervision on the KWP. Drucker has emphasized the vital role of knowledge workers in today's organization and focuses on the need for appropriate management strategies to maximize productivity. The study explains the negative impact of abusive supervision on KWP and focuses on creating a positive work culture for the knowledge workers.

The research supports the importance of knowledge management and leadership in the promotion of KWP and the success of an organization, which are the key themes in both theories. This study demonstrated the adverse impact of abusive supervision on the complex interrelationships between knowledge sharing, knowledge creation, and knowledge utilization amongst knowledge workers in HEIs, which may impair their work productivity. It also explained the impact of knowledge utilization on knowledge-worker productivity as well. The study suggests to leaders in HEIs and managers that abusive supervision is detrimental to organizational knowledge management processes, leading to reduced productivity and job performance among knowledge workers. Thus, top management should avoid destructive leadership behavior and implement policies prohibiting subordinates from practicing abusive supervision. This research supports the importance of KM initiatives in HEIs, as described by Sahibzada et al. (2022) and Iqbal et al. (2019), who studied KM processes in HEIs. This work also falls in line with Ahmed et al. (2021), proving that abusive supervision hampers KM initiatives, which obstruct knowledge-worker productivity in knowledge-intensive organizations.

6.1 Limitations and Future Research Directions

This study has certain limitations, especially because of the choice of research methods. Firstly, the study's sample size and sampling technique can be restricted as a limitation of the study, which

limits the generalizability of the results. Although efforts were made to ensure this diverse sample, it is possible that the sample does not fully represent the population of interest. Secondly, the study is conducted in Pakistan's academic sector (HEIs), which also hampers generalizability. Different educational systems or the diverse cultural norms can impact differently in the domain of abusive supervision and knowledge management resulting in varying results. Thirdly, the study relies on cross-sectional data, making it difficult to conclude the long-term effect of abusive supervision on knowledge worker productivity. Fourthly, the study is based on self-reported single-sourced data, which can be impacted by the perception of the research participants, resulting in an inflated link between the variables, as the individual might over or underestimate the influence of abusive supervision due to social desirability or cognitive biases. Fifthly, the results are applicable withing Pakistani HEIs, but the findings cannot be fully tailored to all the HEIs, i.e., public vs private or research-intensive vs teaching-oriented universities, due to different dynamic of knowledge management processes. Lastly, there can be other biases related to the specific industrial context. As academic sector has different dynamics potentially skewing the results when compared to different sectors. As the knowledge management processes may be different in the sectors with more hierarchical structures.

This study opens the future avenues for the researchers. In the future, it can analyse the impact of different transactional or transformational leadership on the organizational knowledge-creation process and the effect on knowledge-worker productivity; some studies discussed the impact of leadership style on the knowledge management processes and organizational performance (Aldhaheri & Ahmad 2024). Moreover, including different organizational aspects, e.g., organizational culture, leadership styles, and technological advancements, can further advance the existing body of knowledge on abusive supervision and knowledge workers' productivity as the trickle-down impact of abusive supervision influences the organizational climate which hinders the organization productivity (Osei et al., 2021). This aspect can help identify situations under which the negative impact of abusive supervision can be hampered in different industries/sectors. Another future direction can be related to the relationship between knowledge sharing or knowledge hiding on the productivity of students in the HEIs as there are different individual and social factors which influencing the knowledge hiding behaviors (Omotayo & Akintibubo, 2024). Future studies can also demarcate between research-intensive and

teaching-oriented, to provide tailored recommendation and nuanced strategies to enhance knowledge related behaviours when faced with abusive supervision. Future research can also be used by replication of the study in other industries and countries. Conducting similar studies in other industries would be helpful, for example, telecom or textiles, etc., or in a different country where the economic situation is different from Pakistan to understand the underlying factors within different contexts. Future studies can also use additional mediators such as organizational commitment, trust, and psychological safety to strengthen the relationship Knowledge management perspective. Future research can be conducted using a larger sample to maintain the generalizability of the outcome by using a random sampling technique. In the future, longitudinal studies can help to give detailed and better results.

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Appendix: List of Variables and Measures used in the Study

Knowledge-worker productivity (*Palvalin et al., 2015)*
1. I achieve satisfactory results in relation to my goals
2. I am usually able to carry out my work tasks efficiently (smoothly, without problems)
3. I am able to use the majority of my working time for conducting relevant tasks related to my goals
4. My job mainly includes tasks in which I am able to exploit my knowledge and skills efficiently
5. I am able to meet customers' expectations
6. The quality of my work outputs is high
7. The work group I work in works efficiently as a whole
Knowledge Utilization *(Zaim et al., 2007)*
1. My organization has accurate and effective decision-making process
2. My organization can utilize its knowledge base
3. We are encouraged to implement what we know in our job-related activities
Knowledge Sharing *(Kianto et al., 2016)*
1. Communication with other members of my work group is efficient and beneficial.
2. My colleagues are open and honest with each other
3. Our staff is interactive and exchanges ideas widely across the organization
4. I find it easy to communicate and co-operate with employees from other organizational units and functions.
5. There is a mutual understanding between the various organizational units and functions
6. Our staff shares information and learns from each other
Knowledge Creation *(Kianto et al., 2016)*
1. Information about the status, results and problems of different projects is easily available
2. Employees are encouraged to seek information actively outside the organization.
3. My organization constantly gathers information about the external operating environment
4. Our organization actively collects development ideas.
5. Our organization develops new methods for sharing knowledge (e.g., blogs, discussion forums) and encourages using them
6. Customers often participate in our innovation processes (i.e., in developing a new product or service or other solution)
7. We have learning groups, where members can discuss their work experiences and problems

Abusive Supervision *(Mitchell & Ambrose, 2007)*
1. My boss Ridicules me
2. He/ she tells me my thoughts or feelings are stupid
3. He/ she puts me down in front of others
4. He/ she Makes negative comments about me to others
5. He/ she Tells me I am incompetent

FIGURES

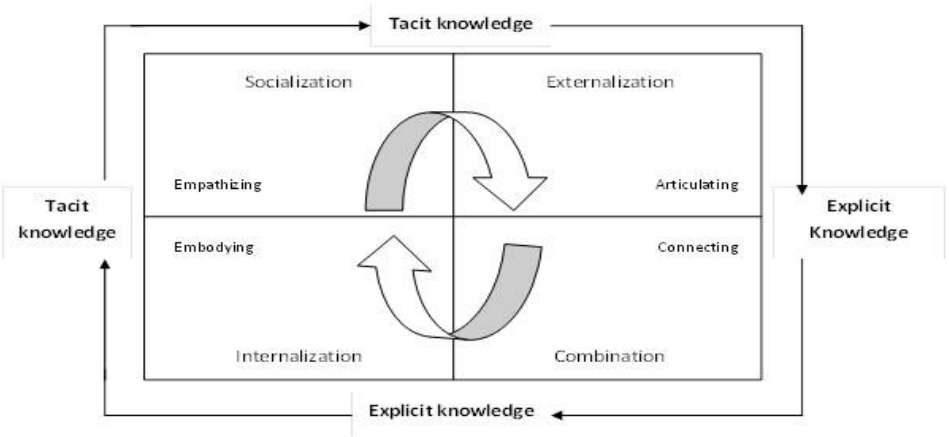

Figure 1: "The SECI model" (Nonaka & Takeuchi, 1995)

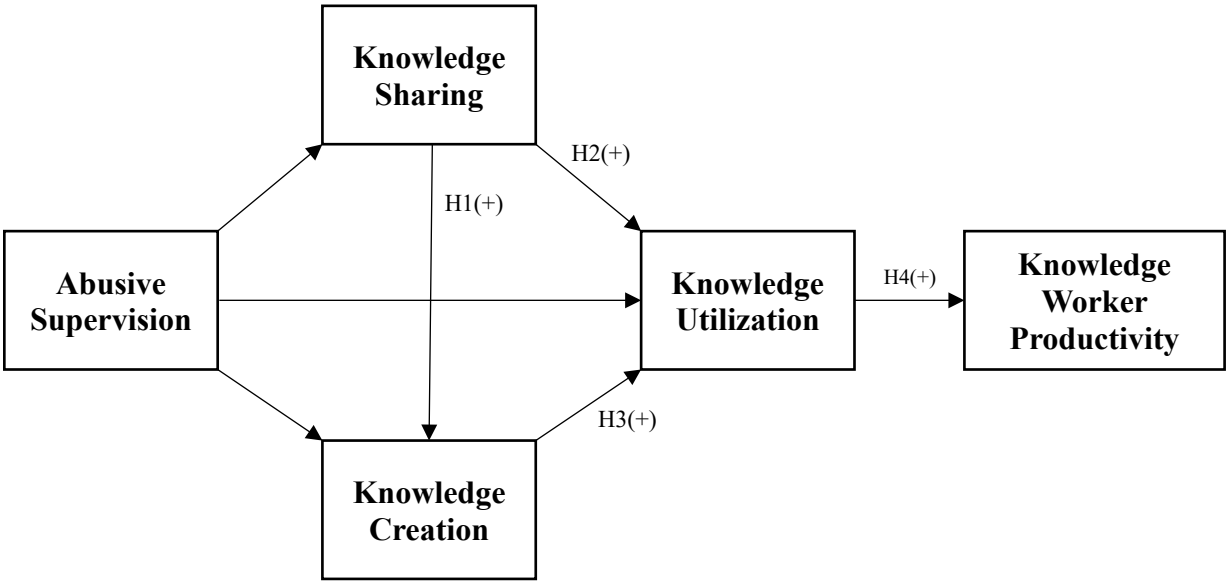

Figure 2: Conceptual Model

TABLES

Table 1(A): Correlation Coefficients, Descriptive and Reliability Statistics

Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10
1.Current Experience	3.082	1.63	--									
2.Overall experience	8.013	6.31	.563**	--								
3. Qualification	2.49	0.824	.333**	.525**	--							
4. Gender	1.51	0.508	-.064	-.053	.053	--						
5. Age	2.63	1.36	.557**	.893**	.548**	-.047	--					
6. KWP	2.15	1.17	-.432**	-.605**	-.497**	-.015	-.702**	**.977**	--			
7. KU	2.26	1.19	-.429	-.551**	-.439**	.007	-.656**	.923**	**.951**	--		
8. KS	2.08	1.00	-.381**	-.553**	-.421**	.010	-.639**	.871**	.856**	**.959**		--
9. KC	2.22	1.16	-.457**	.591**	-.470**	.005	-.686**	.935**	.930**	.876**	**.976**	--
10. AS	3.81	1.23	.475**	.572**	.454**	.028	.662**	-.902**	-.903**	-.820**	-.919**	**.965**

"Note: n=263; Cronbach's Alpha (a) values are given in diagonal position as bold and italic; *p < .05; **p < .01, ***p<.001, KWP: Knowledge Worker Productivity, KU: Knowledge Utilization, KS: Knowledge Sharing, KC: Knowledge creation, AS: Abusive Supervision"

Table 2(A): Confirmatory Factor Analysis

Model	χ2	Df	RMSEA	CFI	NNFI	GFI	IFI	Δχ2	Δdf
One-factor Model	2408.513***	352	0.149	0.827	0.803	0.629	0.827	1481.95	12
Three- factor Model	1313.126***	347	0.103	0.919	0.893	0.707	0.919	386.571	7
Five- factor Model	926.555***	340	0.081	0.951	0.924	0.800	0.951	Baseline Model	

"Notes: n= 263, RMSEA, root mean square error of approximation; CFI, comparative fit index; NNFI, Non-normed fit index; GFI, goodness fit index. The five-factor model explains the actual model with the variable, abusive supervision, knowledge creation, knowledge sharing, knowledge utilization and knowledge-worker productivity. Three-factor model means that the mediating variables are combined into one variable i.e., knowledge management process, dependent variable, knowledge-worker productivity and independent variable abusive supervision, moreover one factor model shows that all the items are included in one latent variable. ***p<0.001"

Table 2 (B): Convergent Validity and Reliability

S. No	Items	Factor Loading (λ)	CR	AVE	Cronbach Alpha
	Knowledge Worker Productivity (KWP)				
1	KWP 1	0.929	0.977	0.860	0.977
2	KWP 2	0.934			
3	KWP 3	0.927			
4	KWP 4	0.924			
5	KWP 5	0.936			
6	KWP 6	0.927			
7	KWP 7	0.918			
	Knowledge Utilization (KU)		0.950	0.865	0.951
1	KU 1	0.935			
2	KU 2	0.931			
3	KU 3	0.925			
	Knowledge Creation (KC)		0.975	0.852	0.976
1	KC 1	0.910			
2	KC 2	0.929			
3	KC 3	0.941			
4	KC 4	0.930			
5	KC 5	0.920			
6	KC 6	0.919			
7	KC 7	0.913			
	Knowledge Sharing (KS)		0.959	0.798	0.959
1	KS 1	0.915			
2	KS 2	0.891			
3	KS 3	0.883			
4	KS 4	0.902			
5	KS 5	0.885			
6	KS 6	0.885			
	Abusive Supervision (AS)		0.965	0.849	0.965
1	AS 1	0.931			
2	AS 2	0.956			
3	AS 3	0.928			
4	AS 4	0.893			
5	AS 5	0.899			

Table 2 (C): Heterotrait – Monotrait Ratio (HTMT) -Discriminant validity

S. No	Variables	1	2	3	4	5
1	Knowledge Worker Productivity	1				
2	Knowledge Worker Utilization	0.62	1			
3	Knowledge Sharing	0.57	0.48	1		
4	Knowledge Creation	0.52	0.39	0.56	1	
5	Abusive Supervision	0.48	0.58	0.63	0.55	1

Table 3: Results of Direct Effects

Direct effects	Effects	S.E.	LLCI	ULCI
KS->KC	0.434	0.041	.352	.516
KS->KU	0.188	0.052	.086	.291
KC->KU	0.535	0.065	.406	.663
KU->KWP	0.284	0.055	.174	.3938

Note: n = 263; KWP: Knowledge Worker Productivity, KU: Knowledge Utilization, KS: Knowledge Sharing, KC: Knowledge creation, LLCI: lower level of the 95% confidence interval; ULCI: upper level of 95% confidence interval; SE: standard error; *p <0.05; **p <0.01; ***p<0.001

Table 4: Results of Indirect Effects

Indirect effects	Effects	S.E.	LLCI	ULCI
AS->KS-> KWP	-.098	0.037	-.1779	-.0304
AS->KC->KWP	-.174	0.518	-.2877	-.0820
AS->KU-> KWP	-.0821	.0297	-.1505	-.0344
AS->KS-> KC-> KWP	-.0753	.0217	-.1204	-.0362
AS->KS-> KU-> KWP	-.0303	.0145	-.0648	-.0084
AS->KC-> KU-> KWP	-.0786	.0232	-.1264	-.0350
AS->KS-> KC-> KU-> KWP	-.0340	.0109	-.0558	-.0138

Note: n = 263; LLCI: lower level of the 95% confidence interval; ULCI: upper level of 95% confidence interval. SE: standard error. *p <0.05; **p <0.01; ***p<0.001; KWP: Knowledge Worker Productivity, KU: Knowledge Utilization, KS: Knowledge Sharing, KC: Knowledge creation, AS: Abusive Supervision,