How can Organizations Effectively use Performance Appraisal Systems and Competent Evaluator to Retain Knowledge Workers? A Systematic Review of the Literature

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Organizations have long struggled with appropriate interventions to mitigate knowledge worker turnover. Because of their unique skills, knowledge workers have a considerably higher rate of turnover than traditional workers, and they are expensive to replace. Organizations can use performance appraisal systems to identify and retain critical employees. Knowledge workers enable organizations to remain creative and innovative as well as maintain their competitive edge. The purpose of this study was to use systematic review of extant literature to show how organizations can effectively use performance appraisal systems and competent evaluators to improve the retention of knowledge workers. This was done by gathering evidence on performance appraisal systems and knowledge workers from various databases and conducting a rigorous synthesis of available evidence.

> Organizations can improve the retention of knowledge workers by identifying them, segmenting them, and strategically deploying suitable performance appraisal systems. Using competent raters can improve positive reaction to appraisal outcomes and potentially mitigate intention to quit.

The efficacy of appraisal systems in mitigating knowledge worker churn was viewed through the lens of expectancy theory and a conceptual framework was developed. Expectancy theory focuses on an individual's belief that they can obtain desired outcomes if they exert certain effort. Knowledge workers want to be challenged by competent raters. A thematic analysis of the evidence revealed important themes for management practice: identify and segment knowledge workers, ensure a positive perception of the appraisal system via 'voice' inclusion, and deploy competent job evaluators for accurate performance evaluation. This is the first known systematic review of the literature which focuses on the competence of the appraiser as an important influence on knowledge workers' reaction to appraisal outcome and how this impacts intention to quit.

Keywords: Performance appraisal, appraisal systems, knowledge worker, knowledge worker segmentation, competent rater, retention, systematic review

What happens when an organization's most critical asset is also the most difficult to retain? Research has shown that knowledge workers have the highest turnover rate in organizations (Horwitz, Heng, & Quazi, 2003, p. 34). Yet, organizations need this group of workers to maintain competitive edge. The Boston Consulting Group has estimated that there will be a worldwide shortage of knowledge workers by approximately 60 million by the year 2020 (Pobst, 2014). Today, work processes have become more complex and knowledge-intensive across a large spectrum of the economy. This makes the retention of knowledge workers a top priority for organizations.

Knowledge workers are highly skilled workers. They are employees who predominantly utilize their thinking skills in doing their work. Because they are creative and innovative, they help their organizations maintain competitive edge. In the past, the most valuable asset of the organization was its equipment but today the most valuable asset of the organization is its knowledge workers (Drucker, 1999). In a globalized world, it has become increasingly easy for human capital to relocate especially in knowledge-based economies. Today, organizations are challenged to design strategies that can make these critical employees remain. For example, it has been estimated that the total costs of replacing a qualified employee in a high-tech firm is between 50 percent and 150 percent of his or her salary (Von Hagel & Miller, 2011).

One of the organizational instruments used to mitigate knowledge worker attrition is the performance appraisal. Performance appraisals can be used to determine promotion, compensation, organizational positioning, training and development, and career in general. An effective performance appraisal system should accurately measure the performance of knowledge workers. This means that the traditional performance appraisal system which is designed to measure quantitative aspects of an employee's productivity would be ineffective as it relates to knowledge workers. Because knowledge workers utilize thinking skills predominantly in performing their work, it is difficult to accurately measure their performance. Quality assessment, not quantitative measurement is key in evaluating knowledge workers.

Organizations must identify their knowledge workers (Caddy, 2007). Identifying knowledge workers enhances their segmentation so that effective appraisal systems that can accurately measure the quality of their productivity can be deployed. The nature and needs of each organization will determine the form of segmentation adopted. This segmentation can be low, medium/moderate, or high (Davenport, Thomas, & Cantrell, 2002). A low segmentation is a one size fits all structure while a high segmentation grants a high degree of autonomy to the identified workers. For example, a small law firm could adopt low segmentation since it is a homogenous group.

Because knowledge worker productivity is difficult to measure, competent raters are needed to effectively evaluate the performance of this category of employees. Research shows that employees who perceive their organizational appraisal system to be effective develop more job satisfaction and commitment. More job satisfaction and affective organizational commitment translates into intention to stay. This is the first known study utilizing systematic review to tackle the problem of knowledge worker retention through the lens of expectancy theory. Additionally, this study contributes to the knowledge worker knowledge domain by highlighting the critical role the job performance evaluator plays toward the knowledge worker's decision to stay or leave. The research question for this study is: How can organizations effectively use performance appraisal systems and competent evaluators to retain knowledge workers?

Literature Summary

Affective commitment and turnover intentions have been found to be negatively correlated (Birecikli, Alpkan, Erturk, & Aksoy, 2008). If employees perceive that their evaluation has been manipulated because of rater's biases, they tend to exhibit less job satisfaction and increased intention to quit. The more sophisticated the object of evaluation, the more knowledgeable the evaluator ought to be for accurate evaluation (Caddy, 2007). Given the difficulty in measuring knowledge work, it becomes imperative that the rater is knowledgeable enough in the knowledge worker's work to render accurate performance appraisal. The lack of relevant information available to the rater has been identified as one of the barriers in conducting effective appraisals (O'Boyle, 2013).

Several themes emerged from coding and data analysis. These include different definitions of knowledge worker, difficulty of measuring knowledge work, segmenting knowledge workers, competent rater, perception of appraisal system, voice inclusion, and frequent appraisal.

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Methodology

A systematic review was used for this research to rigorously review relevant extant literature dealing with performance appraisal systems and their role in the retention of knowledge workers. A systematic review involves using explicit, discernible, and rigorous research methodology in conducting research (Gough, Oliver, & Thomas, 2017). This type of research methodology entails exploring both what is known about a subject (the research question) and what is unknown. The purpose of this research is to determine how organizations can effectively use performance appraisal systems and competent evaluators to retain knowledge workers.

To answer the research question, search strings were developed and relevant databases were searched. This search also extended to Google Scholar. Snowballing technique was used to extract pertinent information and data from key articles. Delimiters such as English, peer-review, and scholarly article were used to enhance relevant search results.

A series of search strings were developed to obtain optimal results based on different data base search criteria. To answer the research question, the following search strings were used:

1. Using University of Maryland OneSearch database (including EBSCOhost, Business Source Complete:
(job* OR career* OR performance* OR work*) N5 (apprais* OR review* OR evaluate OR assess*) AND (retention OR retain* OR assess*) AND (retention OR retain* OR turnover OR churn OR attrition) N10 (*knowledge worker* OR "skilled worker* OR professional* OR specialist*)

2. ProQuest database:
("performance appraisal" OR "job evaluation" OR "performance assessment") AND ("knowledge worker*" OR "skilled worker*" OR professional* OR specialist* OR retention OR retain OR attrition OR churn)

The process of selecting relevant articles involved removing duplicates from search results. This initial step yielded 508 articles. All the abstracts from these articles were read and 206 articles were selected for further review. Forty-five articles were selected from this list for full-text review and 24 articles were evaluated to be relevant to answer the research question. The Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) framework was adopted for documenting this review process.

The TAPUPAS method was used to thoroughly evaluate the quality of the 24 articles. Developed by Pawson, Boaz, Grayson, Long, and Barnes (2003), TAPUPAS is used to evaluate studies based on seven critical criteria: transparency, accuracy, purposivity, utility, propriety, accessibility, and specificity. These articles were scored on a scale of 1–3, with 1 indicating meeting some standards with flaws detected but those flaws do not appear to compromise the evidence, 2 indicating most standards were met with insignificant flaws, and 3 indicating met the highest standards. An article had to earn an overall score of more than 2 to be included.

All selected articles were uploaded to Mendeley (Mendeley, n.d.) and annotated appropriately. These articles were then transferred to ATLAS.ti (ATLAS.ti, 2019) for coding and further content review to delineate emerging themes. Memoing techniques were used to record emerging ideas, tasks, questions, coding and analytical process. This was a research diary to ensure all relevant steps and processes were captured and documented.

Additionally, the CIMO framework (Denyer, Tranfield, & Van Aken, 2008) was adopted to help guide the research. The CIMO logic facilitates answering the research question by identifying the context, intervention, mechanism, and outcome specific to the research question. This framework helps the researcher compartmentalize the various aspects of the study. For this research, the context is the population of organizations; the intervention is the expectancy theory being used to interpret the results; the mechanism is the performance appraisal system used; and the desired outcome is the organization's ability to retain knowledge workers. The CIMO logic is illustrated in Figure 1.

CIMO Logic

- •Context
  - •Organization
- •Intervention
  - •Expectancy Theory
- •Mechanism
  - •Performance Appraisal
- •Outcome
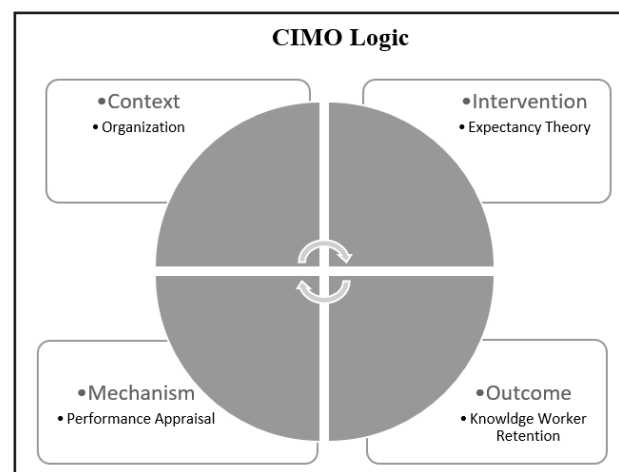 - •Knowldge Worker Retention

Figure 1. An illustration of the CIMO logic showing the interrelationship between the four elements, namely context, intervention, mechanism, and outcome.

Table 1: Themes Impacting Appraisal Effectiveness on Knowledge Worker Retention

Theme	Findings from the Literature	References
Broad and Narrow Definitions of Knowledge Work **Definitions of knowledge worker can be categorized as broad and narrow definitions**	Definitions of knowledge worker range from strictly those who apply knowledge to their work to those whose positions allow them the ability to receive, absorb, and apply new knowledge in making decisions.	Drucker (1999); Alvesson (2000) Amar (2002); Davenport, Cantrell, & Thomas (2002); Smith & Rupp (2004); Caddy (2007); Nelson & McCann (2010)
Segregate Knowledge Workers **Organizations should identify and segregate their knowledge workers to implement effective appraisal systems**	At a minimum, organizations should distinguish their highly valued workers. Knowledge workers are different from traditional workers and they require a different performance appraisal strategy to mitigate intention to quit. Organizations cannot fully understand what makes knowledge workers effective until knowledge workers are identified and segmented. Segmentation of knowledge workers will enable organizations to design appropriate appraisal systems. More segmentation leads to better fit between workers and their environment.	Davenport, Cantrell, & Thomas (2002); Horwitz, Heng, & Quazi (2003); Smith & Rupp (2004), Caddy (2007)
Difficulty of Measuring Knowledge Work **Understanding the tasks of knowledge workers is the first step in measuring their effectiveness.**	Knowledge workers must be viewed as a capital asset, not cost. Thus, organizations need to grow this asset, not try to reduce it like cost. Understanding the tasks of knowledge workers and measuring them accurately is needed for proper valuation of the asset.	Crow (1996); Drucker (1999); Nelson & McCann (2010); Jaaskelainen & Laihonen (2013).
Deploy Competent Job Evaluators **The more specialized the required knowledge is, the more knowledgeable the knowledge evaluator needs to be.**	Raters should adhere to strict and ethical standards in evaluating employees, especially critical employees. The more technical the work is, the more knowledgeable the evaluator needs to be. Raters need to be accurate to avoid legal challenge. Perceived accurate performance appraisal was found to be negatively correlated to quit intention.	Gabris & Ihrke (2001); Caddy (2007); O'Boyle (2013); Giumetti, Schroeder, & Switzer (2015); Hofstetter & Harpaz (2015); Birecikli, Alpkan, Erturk, & Aksoy (2016); Johennesse & Chou (2017)
Perception of Performance Appraisal Process **Employees should trust the performance appraisal process for positive reactions to appraisal outcomes.**	When knowledge workers perceive that their appraisal did not reflect the quality of their work, they exhibit reduced job satisfaction and this leads to greater intention to quit.	Pichler (2012); Hofstetter & Harpaz (2015); Birecikli, Alpkan, Erturk, & Aksoy (2016); Adler, Campion, Colquitt, Grubb, Murphy, Ollander-Krane, & Pulakos (2016); Nawaz & Panjil (2016); Johennesse & Chou (2017)

Theoretical Lens

Although multiple employee behavior theories could help guide organizations to determine how best to use performance appraisal systems to retain employees, expectancy theory was found most suitable to address the problem. Expectancy theory (Vroom, 1964) links expectations to outcomes. The expectancy is the individual's conviction that he or she has the

Include Voice in Appraisal Process	Knowledge workers expect they will be	Gabris & Ihrke (2001);
Include Voice in Appraisal Process Voice is the opportunity to express one's point of view. Inclusion of employees' voice is critical in influencing reactions to appraisal outcomes.	Knowledge workers expect they will be rewarded based on the quality of their work. Expectancy theory is based on a person's conviction that he or she will or will not be able to influence a certain outcome. Skilled workers want to be evaluated with objective criteria and rewarded according to their skill set and productivity.	Gabris & Ihrke (2001); Smith & Rupp (2003); Elicker, Levy, & Hall (2006); Pichler (2012)
Conduct Frequent Appraisals The traditional annual appraisal system has not been effective.	The nature and role of the employee's position should determine the frequency of performance appraisal. While annual appraisal may be suitable for traditional employees, more frequent appraisal is needed to for knowledge workers to take into account the impacts of technology, changing workforce dynamics, and employee performance factor. Frequent appraisal fosters a continuous learning culture, risk-taking, innovation, and collaboration. Frequent appraisal reduces the extent of unexpected surprises in employee performance evaluation.	Smith & Rupp (2003); O'Boyle (2013); Santhanamani & Panchanatam (2016); Johennesse & Chou (2017)

ability to influence a certain outcome. Expectancy theory can help to explain how knowledge workers expect to be rewarded if they exert a certain amount of effort. Knowledge workers are value creators and they want their value recognized and rewarded commensurably.

The other employee related theories considered include equity theory, goal theory, organizational equilibrium theory, social exchange theory, and leader-member-exchange theory (LMX). The equity theory states that an employee compares his or her performance rating with peers' performance rating. This comparison informs the employees' sense of justice judgment. Although knowledge workers want to be treated fairly, they are more concerned about procedural justice than distributive justice. This is because knowledge workers are willing to accept appraisal outcomes if they perceive the appraisal process is thorough. Accordingly, this theory would apply more to traditional workers than knowledge workers. The goal theory's primary supposition is that employees who partake in goal setting will be inclined to set higher goals for achievement (Johennesse & Chou, 2017). But this theory does not emphasize reward especially intrinsic reward, an important variable in the knowledge worker's decision to stay or leave. The organizational equilibrium theory deals with balancing individuals' contributions to the organization and the inducements they are given by the organization (Joo, Hahn, & Peterson, 2015). This theory leaves out the social context in which the performance appraisal occurs, especially the dyadic relationship between the appraiser and the employ-

ee. Also, this theory was considered too broad to be effective in helping organizations use performance appraisal systems to mitigate knowledge worker attrition. The social exchange theory explains how the exchange process influences social behavior. The aim of this theory in the organizational context is to maximize benefits while minimizing costs in the employer-employee relationship. It is based on the exchange of resources between the employer and the employee presently for return in the future. When applied to the performance appraisal context, the social exchange theory would likely focus on the favorable or unfavorable aspect of the performance as a validation of previously agreed upon expectation. However, this theory was found too broad to apply effectively to knowledge workers whose concern is more complex than the outcome of the appraisal process.

By emphasizing the dyadic relationship between the supervisor and the employee, the LMX theory – which is a form of social exchange theory – was found to capture the unique relationship that must exist between the supervisor and the knowledge to build mutual trust and respect. This is important because the knowledge worker must deem the supervisor competent in order to trust the outcome of the appraisal process. According to the LMX theory, the leader does not treat all members equally (Elicker, Levy, & Hall, 2006). Employees who are in the high-LMX category receive greater attention and resources from the supervisor than those in the low-LMX category. This demarcation would allow management to focus more on knowledge workers and pro-

vide them the resources they need to ensure higher job satisfaction. Finally, the expectancy theory posits that employees will exert commensurate amount of effort if they believe they will be rewarded accordingly. Vroom (1964) based expectations on desired outcomes by incorporating the notions of valence, expectancy, and force into the model. Valence is the motivation for future reward; expectancy is the person's conviction that he or she possesses the ability to influence the desired outcome; and force is the drive that propels the individual to achieve the required activity.

Ultimately, a combination of the expectancy theory and LMX theory was found adequate to answer the research question: How can organizations effectively use performance appraisal systems to retain knowledge workers? The expectancy theory provides the framework that organizations can apply to assess productivity based on mutually agreed upon evaluative criteria. This provides the context for knowledge workers to trust the appraisal process as well as the instrument used to measure their performance. While the expectancy theory deals with the organizational context, the LMX theory deals with the unique relationship that must exist between the supervisor and the knowledge worker to engender the efficacy of the appraisal instrument. By placing knowledge workers in high-LMX category, the supervisor can pay special attention to the emerging needs of the knowledge workers to forestall abrupt exit from the organization.

> Although both intrinsic and extrinsic rewards may be important, intrinsic rewards are more important.

Discussion

The purpose of the research was to determine how organizations can effectively use performance appraisal systems and competent evaluators to enhance the retention of knowledge workers. Results from systematic review of the literature show that the appraisal systems applied to traditional workers are not effective when applied to knowledge workers. Knowledge workers prefer their 'voice' be included in the appraisal process (Smith & Rupp, 2003; Elicker, Levy, Hall, & Rosalie, 2006; Pichler, 2012; Pobst, 2014; Giumetti, Schroeder, & Switzer, 2015). They are independent thinkers and prefer a job environment that encourages creativity and innovation (Davenport, Cantrell, & Thomas, 2002; Horwitz, Heng, & Quasi, 2003; Caddy, 2007; Arsalan, Dahooei, & Shojai, 2014; Hofstetter & Harpaz, 2015; & Johennesse & Chou, 2017). As independent thinkers, knowledge workers prefer challenging work with embedded autonomy.

The performance appraisal process is inherently a form of social exchange between the employer and the employee whereby resources are offered presently for some return in the future (Pichler, 2012). This suggests that the social context in which this exchange is conducted is critical in determining reactions to appraisal outcomes (Adler, etc. 2016; Gabris & Ihrke, 2001; Joo, Hahn, & Peterson, 2015).

To accurately evaluate knowledge workers, their tasks first must be clearly delineated (Drucker, 1999). The more complicated the task is, the more knowledgeable the knowledge evaluator ought to be (Caddy, 2007). The organizational personnel charged with this performance appraisal must be competent and understand the complexity of knowledge work. The implication is that organizations must understand the nature of the tasks of knowledge workers by segregating them, and then assign competent raters to accurately evaluate these workers (Caddy, 2007, p. 52). This process leads to positive reactions to the appraisal outcomes and mitigates intention to quit (Birecikli et al, 2016, p. 273). Figure 2 illustrates how a combination of expectancy theory and LMX theory can guide organizations in implementing effective appraisal systems to reduce knowledge worker turnover.

Figure 2 shows the antecedent organizational factors that can improve the effectiveness of performance appraisal systems in retaining knowledge workers. There are essentially four actors shown in the conceptual model: the organization, the organization's instrument of performance appraisal, competent rater, and the knowledge worker. The organization must understand and identify the tasks of knowledge workers, and incorporate their voice in the appraisal process. Then, the organization should segment these workers and design more targeted and effective appraisal systems to evaluate their performance. But for all this to yield optimum result, competent performance evaluators who understand the complexity of knowledge work must be deployed. The LMX theory enables the organization to emphasize procedural and distributive justice (justice judgment) while expectancy theory provides the organization the framework to design effective performance appraisal systems for knowledge workers that reduces their quit intention. The expectancy theory suggests the reward that will flow from exerting certain effort. The combination of LMX and expectancy theories enables the organization to recognize that although both intrinsic and extrinsic rewards may be important, intrinsic rewards are more important.

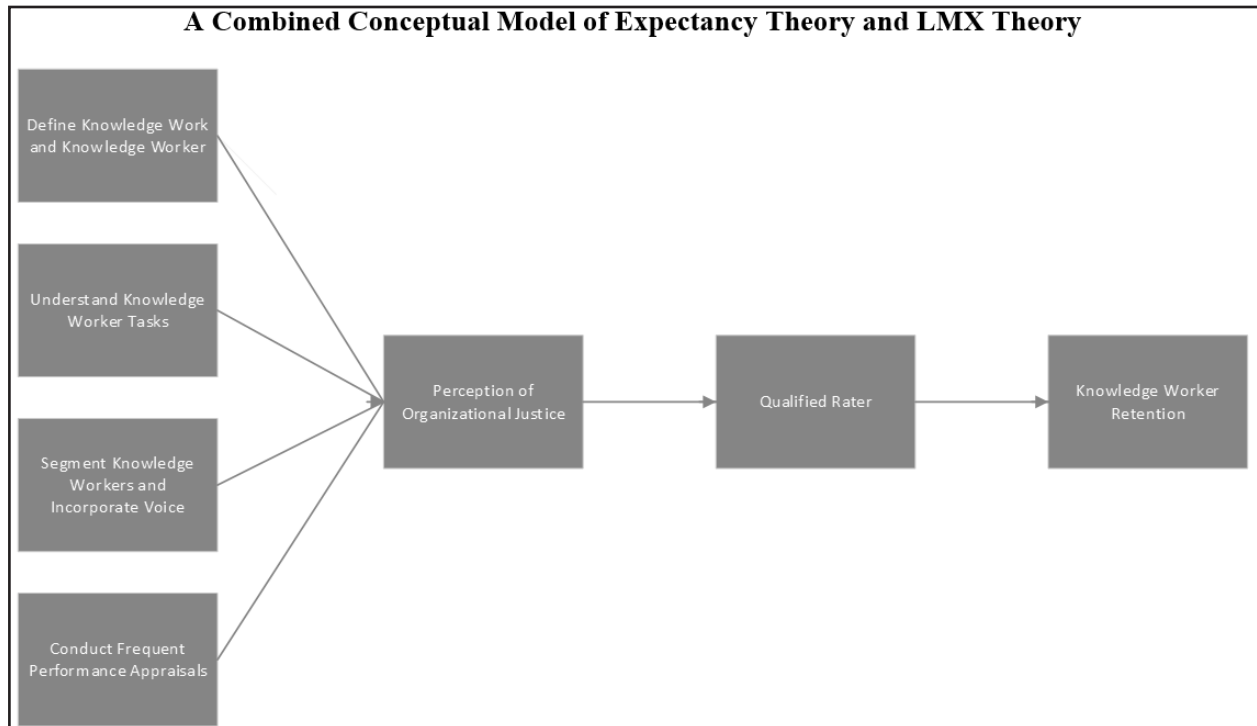**A Combined Conceptual Model of Expectancy Theory and LMX Theory**

Figure 2. An expectancy theory-LMX based conceptual model illustrating how performance appraisal systems can lead to knowledge worker retention.

The key findings from the systematic literature review show that organizations must first understand knowledge work and the employees who perform it. Understanding knowledge work begins with understanding the tasks of knowledge workers (Drucker, 1999). When organizations understand knowledge workers and segment them, then specific, targeted appraisal systems can be designed and deployed to more accurately evaluate their performance. To facilitate accurate evaluation of knowledge workers, organizations must ensure that competent evaluators are used. Because knowledge work is complex and not easily discernible, only trained, competent and knowledge organizational personnel should be engaged to undertake knowledge worker performance appraisal. This is perhaps the most ignored aspect of using performance appraisal systems to evaluate knowledge workers. This study adds to the domain of knowledge work by highlighting the importance of the performance rater in the performance appraisal process. The addition of the competency of the knowledge evaluator as a critical element of the appraisal process helps managers conduct a more effective appraisal of knowledge workers.

Define knowledge work and knowledge workers

Most scholars have attempted to define knowledge work and knowledge workers broadly. Drucker (1959) defined knowledge workers as those who apply knowledge, rather than manual skill or muscle

to work. Knowledge workers are those who carry knowledge as a powerful resource that they, rather than the organization, own (Drucker, 1999). Alvesson (2000) described knowledge work as of intellectual nature where well qualified individuals form a significant portion of the workforce. Davenport, Cantrell and Thomas (2002) described knowledge workers as knowledge finders, packagers, creators, distributors, and appliers. A knowledge worker is a new kind of employee who is paid to gather, develop, process, and apply information for the benefit of the organization (Smith & Rupp, 2004). Generally, knowledge workers are those employees who occupy positions due to the knowledge they possess. This includes the ability to receive, absorb, and apply new knowledge (Caddy, 2007). All this suggests that the term 'knowledge worker' is a broadly inclusive term rather than a narrow one. However, Amar (2002) described knowledge workers more restrictively. According to Amar (2002) knowledge organizations are identified by the knowledge workers that they employ in their research and development, and information technology. This definition obscures the varied roles that knowledge workers play in the organization.

Understand the tasks of knowledge workers

When organizations delineate knowledge work and knowledge workers, it makes understanding the tasks of this group of workers less cumbersome. Un-

derstanding the tasks of knowledge workers is vital to the organization (Drucker, 1999). This is so because knowledge workers are the most valued workers in the organization. Additionally, it is crucial to preserve proprietary organizational knowledge to mitigate knowledge decrements with the exit of knowledge workers from the organization (Caddy, 2007). As difficult as this may be yet there cannot be accurate measurement of the productivity of knowledge workers without understanding what they do and how they do it (Drucker, 1999; Jaaskelainen & Laihonen, 2013). The importance of knowledge workers lies in the uniqueness of what they do and how that impacts organizational competitive edge. Knowledge work is by nature an intellectual engagement where specially qualified employees dominate the workforce (Alvesson, 2000). It is impossible to accurately evaluate the performance of knowledge workers without first understanding their tasks and how those tasks are performed.

Segment knowledge workers from traditional workers

Organizations can better segment knowledge workers after understanding knowledge work and the tasks of knowledge workers. Segmenting knowledge workers allows organizations to better design and deploy more targeted performance appraisal systems to effectively manage them. It is critical that organizations understand this group of employees so that specific programs can be designed to provide them more challenging career (Horwitz, Heng, & Quazi, 2003). Specifically, segmenting knowledge workers would enhance the organization's ability to design and deploy better targeted performance appraisal systems. Since knowledge workers generally have higher turnover rate than traditional workers it becomes even more important that they are segregated so that their organizational proprietary knowledge can be compartmentalized (Caddy, 2007). Without a strategy to secure this organizational proprietary knowledge, it could be lost if the knowledge worker leaves the organization. The nature and extent of segmentation will depend on the structure and needs of the organization. Generally, more segmentation leads to better fit between employees and their environment (Davenport, Cantrell, & Thomas, 2002). Understandably, however, some managers may be reluctant to segment employees because of concern about the perception of elitism in their organization. But no segmentation at all exposes the organization to the greater risk of losing critical employees abruptly.

Engage competent evaluators for knowledge workers

While understanding and segregating knowledge workers can aid organizations in designing specific performance appraisal systems, this by no means guarantees positive reactions to appraisal outcomes. The mode of delivery of the performance appraisal system is just as important. Since the nature of knowledge work is complex it is critical that knowledgeable evaluators are deployed so that accurate assessment can be obtained. The more specialized the knowledge is, the more knowledgeable the knowledge evaluator must be (Caddy, 2007). Accurate evaluation of knowledge workers is critical so that their productivity is appropriately documented. Knowledge workers who perceive their appraisal to be effective develop a greater job satisfaction and diminished intention to quit (Birecikli et al., 2016). Generally, when employees perceive the instrument of the appraisal process valid, they experience an increased level of job satisfaction and a decreased intention to quit (Gabris & Ihrke, 2001). A positive perception of the rater can lead to positive reaction to the appraisal outcome. A competent rater is a trusted rater (Arsalan, Dahooei, & Shojai, 2014; Santhanamani & Panchanatam, 2016). Because knowledge workers largely have greater occupational affinity than organizational loyalty, it is important that organizations effectively utilize the performance appraisal process to mitigate intention to quit.

> Because knowledge work is complex and dynamic, the traditional annual performance appraisal would be ineffective.

Conduct frequent performance appraisals

Because knowledge work is complex and dynamic, the traditional annual performance appraisal would be ineffective. Boyle (2013) has suggested that the nature of the work should determine the frequency of the appraisal process. For instance, annual appraisal may be more suitable for manufacturing and traditional employees while more frequent appraisal may be better for other employees. The nature of knowledge work requires more frequent assessment because knowledge workers desire more frequent evaluation of their contribution to their organization. This is especially true due to the impacts of technology, the significance of millennials in the workforce, and the "high employee performance factor" (Johennesse & Chou, 2017). Frequent performance appraisal helps management identify areas of improvement more quickly. It also helps management keep abreast of the workplace dynamics for timely reaction. The frequency of performance appraisal should be increased so that management can

develop more effective action plans (Smith & Rupp, 2003). In turn, the knowledge worker appreciates management's desire for continued development and job excellence.

Allow voice and raise positive appraisal perception

More frequent appraisal gives management the opportunity to gauge knowledge worker's progress but it also provides the knowledge worker more opportunities for voice. Voice is a term that describes the opportunity to present one's point of view to a decision maker about a decision relevant to that individual (Elicker, Levy, & Hall, 2006). Management should strive to involve employees in the design of the performance appraisal instrument and implementation (Gabris & Ihrke, 2001; Smith & Rupp, 2003). Research overwhelmingly shows that the opportunity to have some say in a process is important to individuals generally. Employee participation in the appraisal process is positively related to appraisal outcomes (Pichler, 2012). Voice is related to the perception of fairness in the appraisal process because of the potential effect of influencing the actual outcome of the process. This positive perception of the fairness of the appraisal process critically affects stay or leave intention (Birecikli, et el., 2016). Employees' positive perception of their organization's distributive and procedural justice systems has a significant impact on their intention to stay or leave (Nawaz & Pangil, 2016).

> There is overwhelming evidence that organizations who are able to retain their most important employees will continue to maintain their competitive edge in their industry.

Recommendations

The seven themes identified in this research provide managers opportunities to explore to ensure their most important asset, human capital, is secured. Becker (1962) argued that turnover leads to the depletion of firm-specific human capital thus leading to a decline in firm performance. This statement underscores the negative relationship between knowledge worker attrition and organizational performance. No particular sequence is being prescribed however organizations are urged to be cognizant of these themes as they seek to implement performance appraisal strategies to retain knowledge workers.

The objective of this research was to explore how organizations can effectively use performance appraisal systems and competent evaluators to mitigate knowledge worker turnover. There is overwhelming evidence that organizations who are able to retain their most important employees will continue to maintain their competitive edge in their industry.

One of the ways organizations can gauge knowledge workers' intention to stay or leave is via effective performance appraisal. The seven themes identified in this research to help organizations implement an effective performance appraisal system include defining knowledge work and knowledge workers, understanding the tasks of knowledge workers, segmenting knowledge workers, engaging competent evaluators for knowledge work, replacing the traditional annual appraisal with more frequent feedbacks, and incorporating knowledge workers' voice in the performance appraisal processes.

An organization must understand the important aspects of its operations and those who do the work. This is a good start in defining knowledge work within the organization. The employees who perform such critical work need to be identified and treated accordingly. The extent of this segmentation will be firm-specific for maximum benefits. This segmentation enables the organization to tailor performance appraisal instruments to effectively determine the needs of critical employees and how to improve their job experience. Effective appraisal instruments will incorporate the voice of knowledge workers and increase their positive perception of procedural justice. Ultimately, the dyadic relationship between the supervisor and the knowledge worker will determine what resources are deployed to sustain the knowledge worker's affective commitment to the organization. This research revealed that this relationship is critical. Therefore, organizations are encouraged to ensure competent supervisors are deployed to manage knowledge workers. As Lancau et al. (2007) found, when employees perceive substantial gap in value with their leader, they tend to be less satisfied with them and develop weak organizational attachment than those with high perceived value similarity. This is especially true with knowledge workers whose work is not reduced to easily quantifiable metrics. Organizations need to make sure that those who supervise and evaluate knowledge workers are highly qualified so that the results of the assessments can be trusted.

Limitations

The role of appraisal systems in retaining knowledge workers is an area that has not been deeply explored by scholars. This is because most studies have focused on the application of appraisal systems on traditional employees. These studies tended to explore human resource practices holistically and their impact on employee attitudes, affective commitment,

and organizational citizenship behavior. The relationship between appraisal systems and the retention of knowledge workers is an area that has not received great scholarly attention. Consequently, it was difficult finding robust scholarly work addressing the research question. Broadly speaking, there is substantial gap in the literature relating to the retention of knowledge workers in general (Nelson & McCann, 2010)

This study was conducted by a single researcher therefore researcher bias cannot be completely eliminated. Multiple raters could have mitigated potential single researcher bias. However, other safeguards were employed to minimize author bias. For example, aside from using discernible inclusion and exclusion criteria, memoing technique was used throughout the research to record important processes, ideas, and tasks. This acted like the researcher's diary. Additionally, TAPUPAS was used to assess the quality of the articles selected for the study.

Directions for Future Research

Scholars can shine more light on the importance of knowledge workers by illustrating quantitatively what organizations stand to lose without proper accounting of knowledge work. This inquiry will also show the performance of organizations with low turnover of knowledge workers against those with relatively high turnover of knowledge workers.

Since organizations have been hesitant to segregate knowledge workers from other workers, scholars can explore the impacts of low, medium, and high segregation on overall organizational performance. This type of research would help managers make evidence-based decisions. It would also be helpful in closing the gap between theory and management practice.

Finally, it would be helpful to operationalize the impact of using highly competent performance raters on an organization's ability to retain knowledge workers. Such study would provide managers with substantive information in administering the performance appraisal process of knowledge workers.

Conclusions

Performance appraisal systems have evolved from the early models as trait-based instruments which emphasized character, integrity and trustworthiness to being used as specific job-performance measurement apparatus (Hofstetter & Harpaz, 2015). Currently, organizations are beginning to align performance appraisal systems with their overall organizational goals.

The current practice is to use performance appraisal to achieve certain discernible organization objectives. This includes determining compensation, recognition, rewards, promotion, organizational positioning, training, and termination of contract. Performance appraisal systems continue to be an important instrument of organizational HR practice.

This systematic review was conducted to explore how organizations can best use appraisal systems and competent evaluators to retain their most important asset: the knowledge worker. The study is especially important because the turnover among knowledge workers has been found to be greater than traditional employees. Since the characteristics of knowledge workers are significantly different from traditional workers, it would be ineffective to apply the same generic performance appraisal systems to knowledge workers.

This study adds to the domain of knowledge work by providing evidence-based recommendations on how to use appraisal systems to retain knowledge workers. Evidence from this study show that while it is crucial for organizations to identify and segment knowledge workers, it is just as important to ensure competent job evaluators evaluate the performance of this group of workers. The complexity of knowledge work requires that only competent raters are used for more accurate job assessment. Effective performance appraisal has been shown to be positively related to intention to stay. Additionally, a conceptual model based on expectancy theory and LMX theory was developed to guide managers in implementing suggested recommendations. The findings in this research will help organizations to clearly delineate knowledge work and knowledge workers, and then ensure that trained and competent raters conduct the performance appraisal of knowledge workers for optimum organizational benefit.

References

Amar, A.D. (2002). *Managing knowledge workers: Unleashing innovation and productivity.* Westport, CT: Quorum

Adler, S., Campion, A., Colquitt, A., Grubb, A., Murphy, K., Olander-Krane, R. & Pulakos, E.D. (2016). Getting rid of performance ratings: Genius or folly? A debate. *Industrial and Organizational Psychology*, 9(2). 219–252. https://doi.org/10.1017/iop.2015.106

Alvesson, M. (2000). Social identity and the problem of loyalty in knowledge-intensive companies. *Journal of Management Studies*, 37(8), 1101–1120.

Arsalan, M. R, Dahooei, J. H. & Shojai, A. G. (2014). Vine, 44(2), 295–318. https://doi.org/10.1108/vine-05-2012-0017

ATLAS.ti. (2019). What is ATLAS.ti? Retrieved from https://atlasti.com/product/what-is-atlas-ti/

Becker, G. S. (1962). Investment in human capital: A theoretical analysis. *Journal of Political Economy*, 70(5), Part 2, 9-49

Birecikli, B., Alpkan, L., Erturk, A. & Aksoy, S. (2016). Employees' need for independence, organizational commitment, and turnover intentions: The moderating role of justice perceptions about performance appraisals. *International Journal of Organizational Leadership*, 5(3), 270– 84. https://doi.org/10.33844/ijol.2016.60461

Caddy, I. (2007). Identifying knowledge workers: Using direct versus indirect approaches. *Employment Relations Record*, 7(2), 47–62. http://ezproxy.umuc.edu/login?url=http://search

Crow, R. (1996). You cannot improve my performance by measuring it! *The Journal for Quality and Participation*, 19(1), 62. ISSN: 10409602

Davenport, T. H. & Thomas, R.J & Cantrell, S. (2002). The mysterious art and science of knowledge worker performance. *MIT Sloan Management Review*, Vol. Fall, pp. 2–30.

Denyer, D., Tranfield, D., & Van Aken, J.E. (2008). Developing design propositions through research synthesis. *Organization Studies*, 29, 393–413. https://doi.org/10.1177/0170840607088020

Drucker, P.F. (1999). Knowledge worker productivity: The biggest challenge. *California Management Review*, 41(2), 79–94. https://doi.org/10.2307/41165987

Drucker, P.F. (1959). *Landmarks of tomorrow*. New York: Harper

Elicker, J.D., Levy, P.E., & Hall, R.J. (2006). The role of leader-member exchange in the performance appraisal process. *Journal of Management*, 32(4), 531-551. https://doi.org/10.1177/0149206306286622

Gabris, G. & Ihrke, D. (2001). Does performance appraisal contribute to heightened levels of employee burnout? The results of one study. *Public Personnel Management*, 30(2), 157–172. https://doi.org/10.1177/009102600103000203

Gough, D., Oliver., and Thomas, J. (2017). *An introduction to systematic review*. SAGE:

Giumetti, G., Schroeder, F. & Switzer, F. (2015). Forced distribution rating system: When does "rank and yank" lead to adverse impact? *Journal of Applied Psychology*, 100(1), 180–193. https://doi.org/10.1037/a0037191

Hofstetter, H. & Harpaz, L. (2015). Declared versus actual organizational culture as indicated by an organization's performance appraisal. *International Journal of Human Resource Management*, 26(4), 445-466. https://doi.org/10.1080/09585192.2011.561217

Horwitz, F., Heng. & Quazi, H. (2003). Finders, keepers? Attracting, motivating and retaining knowledge workers. *Human Resource Management Journal*, 13(4), 23–44. https://doi.org/10.1111/j.1748-8583.2003.tb00103.x

Jaaskelainen, A., & Laihonen, H. (2013). Overcoming the specific performance measurement challenges of knowledge-intensive organizations. *International Journal of Productivity and Performance Management*, 62(4), 350–363. https://doi.org/10.1108/17410401311329607

Johennesse, L. & Chou, T. (2017). Employee perceptions of talent management effectiveness on retention. *Global Business and Management Research: An International Journal*, 9(3), 46. ISSN: 1947-5667

Joo, B., Hahn, H. Peterson, S. (2015). Turnover intentions: The effects of core self-evaluations, proactive personality, perceived organizational support, developmental feedback and job complexity. *Human Resource Development International*, 18(2), 116–130. https://doi.org/10.1080/13678868.2015.1026549

Lancau, M. J., Ward, A., Amason, A., Ng, T., Sonnenfeld, J.A., and Agle. B.R. (2007). Examining the impact of organizational value dissimilarity in top management teams. *Journal of Managerial Issues,* 19(1), 11-34

Mendeley, (n.d.). Retrieved from https://www.mendeley.com/?interaction_required=true

Nawaz, M. & Pangil, F. (2016). The effect of fairness of performance appraisal and career growth on turnover intension. *Pakistan Journal of Commerce and Social Science*, 10(1), 27–44. http://jespk.net/publications/278.pdf

Nelson, k. & McCann, J. (2010). Designing for knowledge worker retention & organizational performance. *Journal of Management and Marketing Research*, 3, 1–18. DOI: 10.1016/j.jnucmat.2006.06.008

O'Boyle, L. (2013). Traditional performance appraisal versus 360-degree feedback. *Training & Management Development Methods*, 27(1), 201–206.

Pawson, R., Grayson, L., Long, A., & Barnes, c. (2003). *Types and quality of knowledge in social care*, London: SCIE

Pichler, S. (2012). The social context of performance appraisal and appraisal reactions: A meta-analysis. *Human Resource Management*, 51(5), 709–732. https://doi.org/10.1002/hrm.21499

Pobst, G.F. (2014). Meeting the challenge of knowledge worker with strategic talent management. *American Journal of Management*, 14(1/2), 62-66

PRISMA. (n.d.). Preferred reporting items for systematic reviews and meta-analyses. Retrieved from https://www.prisma-statement.org/. https://doi.org/10.7717/peerj.4598/supp-5

Santhanamani, C. & Panchanatham, N. (2016). Implementation bell-curve in performance appraisal

– a critical review. *International Journal on Global Management and Research*, 5(2), 86-93

Smith A.D. & Rupp, W.T. (2003). Knowledge workers: Exploring the link among performance rating, pay and motivational aspects. *Journal of knowledge management*, 7(1), 107-124. https://doi.org/10.1108/13673270310463662

Smith, A.D. & Rupp, W.T. (2004). Knowledge workers' perceptions of performance ratings. *Journal of Workplace Learning*, 16(3), 146-166. https://doi.org/10.1108/13665620410528506

Von Hagel Jr. W.J., & Miller, L. (2011). Precipitating events leading to voluntary employee turnover among informational technology professionals. *Journal of Leadership Studies*, 5(2), 14-33. https://doi.org/10.1002/jls.20215

Vroom, V.H. (1964). *Work and Motivation*. New York: Wiley

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