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Factors that Influence South African Knowledge Worker Behaviour

Les facteurs influençant le comportement des travailleurs du savoir en Afrique du Sud

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Abstract: Organizations now rely on knowledge workers to take responsibility for their own career development. The demand for knowledge workers is on the increase, yet little is known with regard to their career perceptions and attitudes. This article focuses on exploring the issues and factors affecting the career development of South African knowledge workers. Specialization and dual career ladders are required to ensure that the knowledge residing in the minds of knowledge workers is not lost. A survey was conducted to determine career development opportunities for knowledge workers in South Africa. The results revealed that knowledge workers are motivated through traditional means such as money, awards, and recognition, but place less emphasis on temporary assignments and mentoring than their counterparts from other countries. Organizations should leverage the knowledge contained in the minds of their knowledge workers to create a sustainable, competitive advantage.

Keywords: career development, knowledge workers, South Africa, work satisfaction

Résumé : Les organisations utilisent désormais des travailleurs du savoir en comptant qu'ils assument la responsabilité de leur propre développement professionnel. La demande de travailleurs du savoir est à la hausse, mais leurs perceptions et attitudes de carrière sont très mal connues. Cet article se concentre sur l'exploration des enjeux et des facteurs affectant le développement de carrière des travailleurs du savoir sud-africains. Spécialisation et doubles échelons de carrière sont nécessaires pour s'assurer que les connaissances que contiennent les esprits des travailleurs du savoir ne soient pas perdues. Une enquête a été menée afin de déterminer les possibilités de développement de carrière pour les travailleurs du savoir en Afrique du Sud. Les résultats ont révélé que les travailleurs du savoir sont motivés par des moyens traditionnels tels que l'argent, les prix et la reconnaissance, mais qu'ils mettent moins l'accent sur les affectations temporaires et le mentorat que leurs homologues d'autres pays. Les organisations devraient tirer parti des connaissances que contiennent les esprits de leurs travailleurs de savoir afin d'en tirer un avantage concurrentiel durable.

Mots-clés : déroulement de carrière, travailleurs du savoir, Afrique du Sud, satisfaction au travail

Introduction

Work provides a person with a sense of purpose, challenge, self-fulfilment, development, and income to enable one to participate in other spheres of life (Baruch 2004, 39). In the process, work becomes a source of identity as well as creativity and mastery for people (39). Organizational restructuring has led to more dynamic careers as stable employment with one organization is no longer possible. The impact can be seen in the way knowledge workers need to plan, develop, and manage their careers (Baruch 2004, 2). Career planning and management spans a working life of almost 50 years, which is longer than the lifespan of most organizations, as the life expectancy of an organization is approximately 30 years (Drucker 2001, 217).

In the knowledge economy, everyone expects a successful career, but career failure is a reality that most knowledge workers need to address. To create a successful career and leadership opportunities, knowledge workers employ strategies such as second careers, outside interests, a parallel career, and even social ventures, which all instill a measure of success (Drucker 2001, 283). The knowledge economy is forcing knowledge workers to realize that multiple assignments, projects, and jobs—and possibly even multiple careers—are the norm. Even though the knowledge economy can be turbulent, successful knowledge workers are able to see new opportunities for themselves and society, and career development is becoming a concern for organizations and knowledge workers alike.

The objective of this article is to determine the factors affecting the career development of knowledge workers in South Africa. The primary research question that this article aims to answer is, are knowledge workers in South Africa satisfied with their careers? The second research objective is to determine causes of career dissatisfaction among knowledge workers in South Africa and to determine areas where career development is needed.

Literature review

To achieve the objectives of the article, the literature review will describe the key characteristics of knowledge workers and knowledge work, and the career development of knowledge workers.

Knowledge workers

The origin of the term “knowledge worker” can be traced back to Fritz Machlup, a Princeton University economics professor who began examining knowledge in the 1950s. Machlup studied the creation, distribution, and significance of knowledge from an economic perspective (Marcus and Watters 2002, 97). The impact of knowledge on the field of economics made Machlup realize that knowledge is something distinctive and complex that requires a new type of worker, someone who is better educated and trained to answer the demand for knowledge workers.

Gottschalk (2005, 27) defines knowledge workers as employees of an organization. The distinction lies in the finding, understanding, and usage of knowledge independent of other employees. Responsibility for learning and development lies with the knowledge worker, not the organization. Lee-Kelley, Blackman, and Hurst (2007, 205) define knowledge workers as “any employee possessing specialist knowledge or know-how who is involved in consultancy based on their specialist knowledge or know-how, or research and development work for new products, services or processes.” Paton (2005, 23) defines a knowledge worker as an educated individual. The individual has been educated in a specialist knowledge area and possesses theoretical, contextual, or tacit knowledge. The individual is actively working in this field of specialist knowledge, all the while learning more about this field of knowledge. For the purpose of this article, a knowledge worker is seen as an individual who has considerable knowledge and learning in a specialist field.

To specialize, knowledge workers must know about their jobs and tasks more than their managers or anyone else in the organization (Myers 1996, 47). Knowledge workers depend on their managers only to provide direction and define the outcome of their tasks (Drucker 1999, 87; Drucker 2001, 80). Even though this means that knowledge workers are highly specialized, they are mobile within their field of specialization and they generally are not very loyal to any specific organization (Drucker 2002, 259). As long as knowledge workers can stay within a specific field of knowledge, they are quite happy to move from one organization to another, as their allegiance is to a specialized branch of knowledge and not the organization (Harman and Brelade 2000, 49).

Knowledge work

The work that is performed by knowledge workers throughout their careers forms part of knowledge work. Knowledge work is discretionary behaviour and activities that are performed by knowledge workers (Efimova 2003; Schell 2008). Information gathering, imagination, experimentation, discovery, and integration of knowledge within larger systems are all part of knowledge work (Myers 1996, 24). Technical skills, behavioural competencies, and attitudes all contribute to the knowledge work that is performed (Mercer 2008). Knowledge workers essentially think for a living, doing intangible work that is collaborative and iterative in nature to generate a competitive advantage for their organization (Zuber-Skerritt 2005, 54; Tymon and Stumpf 2003, 17). Skills, competencies, commitment, motivation, loyalty, creativity, education, and attitude all contribute to knowledge work and are essential to knowledge management (Marr, Schiuma, and Neely 2004, 560; Binney 2001, 36).

Career development of knowledge workers

The period of the 1950s to the 1980s were characterized by traditional careers, which were seen as stable and predictable. Careers were a succession of related jobs arranged in a hierarchy of status levels through which people moved in an ordered and predictable sequence (Currie, Tempest, and Starkey 2006, 756).

The organization determined what constituted career success, which was usually measured by promotions and increases in salary.

The changes in traditional organizational structures are forcing many individuals to change their view of a career, as the career options in flatter organizations are limited (Evans 2003, 180). The change of career type from a traditional hierarchical career to a career characterized by a lack of organizational support and boundaries has shifted the responsibility for career development away from organizations to individual knowledge workers (Currie, Tempest, and Starkey 2006, 756). Myers (1996, 184) and Tampoe (1996) identified four key career motivators once a knowledge worker has moved beyond career entry. These four key motivators are personal growth, operational autonomy, task achievement, and money.

Personal growth is the first key motivator and can be described as the opportunity for individuals to realize their potential through intellectual, personal, and career development. Organizations need to address job design, assignments, and career progress to provide meaningful and challenging work that will lead to personal growth for knowledge workers (Mercer 2008). Knowledge acquisition forms part of personal development, leading to a sense of achievement and recognition by peers, and ensures that workers grow as individuals and as professionals (Lin et al. 2008, 93; Svetlik and Stavrou-Costea 2007, 197; Thite 2004, 33). Career development programs need to offer career path design, mentoring, training, improved work environments, and competitive compensation packages (Currie, Tempest, and Starkey 2006, 760).

The stimulation and challenges provided by the job that a knowledge worker performs also contribute to personal growth. Knowledge workers, such as software developers, desire challenging work and learning opportunities (Dovey and White 2005, 253). People are motivated when they are interested in the job, even though they may find the status, perks, or responsibility associated with it of little value.

Operational autonomy is the second key motivator and can be described as a work environment that allows knowledge workers to have control over the tasks that are assigned to them within the constraints of the organizational setting (Kubo and Saka 2002, 264). Knowledge workers need a dynamic knowledge-based organization to be able to define and direct their own jobs if they are to take responsibility for their tasks (Drucker 1999, 84; Myers 1996, 46). Organizational culture needs to align itself with the values and habits of knowledge workers to provide such a level of autonomy (Nemeth and Nemeth 2001, 101). The key to obtaining this level of autonomy lies in the level of flexibility a knowledge worker's manager will allow (Mercer 2008).

Task achievement is the third key motivator and can be described as the sense of satisfaction that a knowledge worker gets from producing work of a high standard and quality that the individual feels proud of. Aligning the personal goals of knowledge workers with organizational goals will enable them to be motivated through task achievement to work toward common goals rather than egotistic ones (Kelly 2000, 126). Another issue related to task achievement

is the boredom associated with repetitive or less challenging tasks. Tasks need to be kept challenging to prevent boredom from reducing the sense of accomplishment that knowledge workers get over their working careers (Dovey and White 2005, 253; Drucker 2001, 281).

Financial compensation (the fourth motivating factor) may be less important for knowledge workers than traditional workers, as job security for knowledge workers depends on the development of a body of knowledge and skills that they can transfer from one organization to another (Kelly 2000, 125). Money is seen as a reward for the contribution made by knowledge workers to the success of the organization. Even though money cannot ensure the retention of knowledge workers, remuneration should be structured according to the way work is defined in the organization and could include basic pay, incentives, benefits, and retirement funds (Mercer 2008). The study of money as a motivational factor has always featured prominently in career studies (Petroni and Colacino 2008, 22). An interesting finding in this regard shows that male knowledge workers change jobs more often for higher pay than their female counterparts (Yang and Lee 2009, 87).

In this section, the key characteristics of knowledge workers and knowledge work and the career development of knowledge workers were discussed. It is concluded that the knowledge economy developed out of the need for more complex products and services and that the workers who are able to create such complex products and services are called knowledge workers. This study used a questionnaire based on the above factors that influence knowledge worker behaviour. The next section will discuss the findings of the empirical survey on the career development of knowledge workers in South Africa.

Research methodology (survey on career development of knowledge workers)

The population for the empirical survey consists of all knowledge workers in South Africa. A sampling frame could not be established. The population thus needed to be more narrowly defined for the purposes of this research project. Knowledge workers are considered to be people with considerable theoretical knowledge and learning (Drucker 2002, 238). As such, knowledge workers are responsible for their own learning and development (Gottschalk 2005, 27), using diverse sources to acquire more information and knowledge. Even though knowledge workers may be educated in a specific knowledge area, they are continually learning (Paton 2005, 23). The knowledge economy requires knowledge workers to acquire new skills and talents (Waddock 2007, 544) in order to contribute to the organization's competitive advantage (Drucker 2002, 124). Knowledge workers are thus considered to be individuals partaking in some form of learning to increase their knowledge. As they meet these criteria, part-time learners of a postgraduate course were used as a purposive sample to access the knowledge worker population. The respondents were all enrolled at the University of Johannesburg for the Master of Commerce (Business Management) course. All the respondents in the sample were in full-time employment

in various organizations in South Africa, were of both genders, were from different age groups and occupations, and were from varying educational levels. A questionnaire (see appendix) was used as the measuring instrument. The questionnaire was composed in English since English is generally understood across the country and is the language used in business, politics, and the media. The questionnaire was divided into two parts: biographical data and career data. The career data part was divided into nine sections: knowledge as seen from a career perspective, knowledge development, career motivators, career readiness, career goals, career path, career strategy, social and team aspects of knowledge, and career satisfaction. Each section was given a rating on a five-point Likert scale to obtain a favourable or unfavourable response from each respondent. The questionnaire was pre-tested on a small target group to detect any design errors. The target group consisted of knowledge workers in the information technology field with various levels of educational backgrounds who are currently in the process of learning or acquiring new skills. The individuals have characteristics and backgrounds similar to the target respondents.

The questionnaire was published on the web and featured a welcoming page, which attempted to gain the respondent's cooperation and which provided instructions on how to complete the questionnaire and an estimate of the time required to complete it (Zikmund 2003, 222). The web address of the online survey was distributed via electronic mail to 266 respondents. Of the 90 questionnaires completed, 82 questionnaires were usable, which resulted in a response rate of 31%.

The reliability for the sections was determined using Cronbach's alpha test, which determined whether the measuring instruments were homogenous (Cooper and Schindler 2003, 42).

The Cronbach's alpha for each section is shown in Table 1.

Table 1: Reliability of questionnaire sections

Section	Cronbach's Alpha
Knowledge	0.730
Knowledge development	0.683
Career motivators	0.725
Career readiness	0.754
Career goals	0.736
Career path	0.814
Career strategy	0.874
Social & team aspects of knowledge	0.825
Satisfaction	0.896

The reliability coefficient for each section (except the section on knowledge development) is greater than 0.7, indicating a positive reliability. The section on knowledge development has a Cronbach's alpha of 0.683. The sections

mentioned in Table 1 are thus considered to be reliable for the purpose of this survey.

Findings

Biographical data

The gender of the respondents that completed the online questionnaire was mostly male (69.5%). The representation of females was low (30.5%). The age groups below 41 years and above 25 years provided the most responses, and the number of responses from people older than 40 years tapered off to only two people older than 55 years. The business and information technology fields were predominantly the respondents' fields of specialization. Of the three respondents outside of these fields, one was in the educational field and the other two were in the logistics field. The length of employment of the respondents with their current employer is quite interesting, as 47.5% of respondents had worked for their current employer for less than three years. The demographic data are indicative of a broad range of knowledge workers. The length of employment indicates that knowledge workers are no longer content with lifelong employment with one organization.

Impact of knowledge on careers of knowledge workers

Respondents were asked whether they agree with four statements regarding the impact knowledge has made on their careers. The descriptive statistics related to knowledge as seen from a career perspective are shown in Table 2 with the results in percentages. The modal category for each option is shaded, and the actual number of responses is shown in parentheses below the percentage value.

Table 2: Knowledge Workers' Perceptions of the Impact of Knowledge on their Careers

	Totally agree (% (n))	Agree (% (n))	Neutral (% (n))	Disagree (% (n))	Totally disagree (% (n))
Knowledge is a key factor in any decision made with regard to my career.	31.7 (26)	47.6 (39)	12.2 (10)	8.5 (7)	0.0 (0)
Knowledge is crucial in giving me a competitive advantage in my career.	58.5 (48)	34.1 (28)	6.1 (5)	1.2 (1)	0.0 (0)
My job requires more knowledge than it ever did before.	47.6 (39)	32.9 (27)	17.1 (14)	2.4 (2)	0.0 (0)
The higher my level of knowledge, the more rewards I will receive.	24.4 (20)	40.2 (33)	24.4 (20)	8.5 (7)	2.4 (2)

Table 2 indicates that knowledge is seen as a key component in a knowledge worker's career, as more than 58% of the respondents indicated that they totally agree that knowledge is crucial to providing knowledge workers with a competitive advantage in their careers. The importance placed upon knowledge in career decisions is consistent with knowledge workers creating a competitive

Figure 1: Steps taken by knowledge workers to further career aspirations.

advantage in the knowledge economy through the use of knowledge (Harman and Brelade 2000, 2). The amount of knowledge required by knowledge workers' jobs is indicative of the amount of information required by knowledge workers in the knowledge economy (Bontis 2001, 3; Deng 2008, 174).

Steps taken to develop knowledge in order to realize career aspirations

The descriptive statistics related to knowledge development as seen from a career perspective are shown in Figure 1. Figure 1 indicates that knowledge development is required by knowledge workers, as 68.3% of the respondents totally agree that lifelong learning is important, which agrees with the statements by Alley (1999, 189) and Drucker (2001, 305) that learning is a lifelong process. The majority of the respondents (68.3%) also totally agree that they are responsible for their own personal development, as it seems that employers are no longer willing to take this responsibility (Thite 2004, 32). The low number of respondents (0.08%) who totally agree that they mainly use internal training to develop their knowledge is indicative of the low investment that South African organizations make in knowledge workers, according to Smith (2008). The number of respondents (0.23%) who totally agree that they primarily use external training to develop their knowledge should be cause for concern for organizations, as this could indicate that organizational training and development programs are not living up to the expectations of knowledge workers.

Factors that motivate knowledge workers in their careers

Respondents were asked to identify factors that motivate them in their careers as knowledge workers. The descriptive statistics related to career motivators are shown in Figure 2.

Figure 2: Factors motivating knowledge workers in a chosen career.

Figure 2 indicates that challenging work assignments, monetary rewards, and recognition by peers are seen as very important career motivators. Recognition by peers is noted as an important motivator by Bergeron (2003, 73); DeFillippi, Arthur, and Lindsay (2006, 102); Drucker (2002, 259); and Thite (2004, 33) and is seen by 27% of respondents as a career motivator to a large extent. Monetary rewards are recognized by 45% of respondents as a key career motivator. This finding supports the findings of Kubo and Saka (2002, 269), which indicate that monetary incentives are a key motivator for knowledge workers in the financial industry in Japan. Challenging work assignments are seen by 46% of respondents as a motivational factor to a large extent, and by 40% of the respondents as a motivational factor to some extent in their careers (Dovey and White 2005, 253; Mercer 2008). Social status is considered the least important career motivator for these knowledge workers.

Factors affecting readiness for a knowledge career

Table 3 indicates that 56.1% of respondents totally agree and 37.8% agree that technology is an important part of career readiness for knowledge workers. This finding supports the findings of Carter and Scarbrough (2001, 216) that technology is an important part of knowledge management. The majority of the respondents (46.3%) agree that they have created their own knowledge career strategies. Fifty per cent of respondents agree that they have enough knowledge to start their careers, which may be a sign of overconfidence, as the skills and knowledge required by knowledge workers are continually changing (Drucker 2002, 27).

Career path of a knowledge worker

Table 4 indicates that the need to become a specialist is very important to 48.8% and important to 37.5% of the respondents. According to No Doubt Research (2003, 3), knowledge workers are highly specialized and loyal to their specific field of knowledge. Dual career ladders are very important to 31.3% of

Table 3: Factors affecting readiness for a knowledge career

	Totally agree (% (n))	Agree (% (n))	Neutral (% (n))	Disagree (% (n))	Totally disagree (% (n))
I feel that I am in charge of my own knowledge career.	36.6 (30)	54.9 (45)	7.3 (6)	1.2 (1)	0.0 (0)
I adapt to any challenges in my career.	40.2 (33)	57.3 (47)	2.4 (2)	0.0 (0)	0.0 (0)
I see new technology as beneficial to my career.	56.1 (46)	37.8 (31)	3.7 (3)	2.4 (2)	0.0 (0)
I have created my own knowledge career strategy.	25.6 (21)	46.3 (38)	18.3 (15)	8.5 (7)	1.2 (1)
I have enough knowledge to kick off a fulfilling career.	24.4 (20)	50.0 (41)	15.9 (13)	9.8 (8)	0.0 (0)

Table 4: Career path as a knowledge worker

	Very important (% (n))	Important (% (n))	Neutral (% (n))	Unimportant (% (n))	Very unimportant (% (n))
Dual career ladders (managerial and professional options).	31.3 (25)	40.0 (32)	21.3 (17)	6.3 (5)	1.3 (1)
Becoming a specialist in my field of knowledge.	48.8 (39)	37.5 (30)	8.8 (7)	5.0 (4)	0.0 (0)
Lifetime employment with a single organization.	3.8 (3)	6.3 (5)	32.5 (26)	41.3 (33)	16.3 (13)
A portfolio of multiple jobs with different organizations over the lifetime of my career.	15.0 (12)	40.0 (32)	32.5 (26)	10.0 (8)	2.5 (2)
Temporary work assignments followed by short periods of unemployment.	1.3 (1)	11.3 (9)	23.8 (19)	21.3 (17)	42.5 (34)

the respondents. This finding correlates with the findings of Holman et al. (2003, 146) and Petroni and Colacino (2008, 22) on the importance of dual career ladders. Having upward career growth while staying in a profession without becoming a manager is thus seen as an important career path for knowledge workers. Matching personal and organizational goals is very important to 42.9% of the respondents, which is indicative of knowledge workers wanting to be motivated through task achievement by working toward organizational and personal goals (Kelly 2000, 126). The lack of importance attached to temporary work assignments by 42.5% of respondents could be attributed to the economic downturn or the lack of temporary work assignments available to knowledge workers in South Africa as discussed by McKenna (2006, 11).

Figure 3: Steps that knowledge workers employ to achieve career goals.

Steps that knowledge workers employ to achieve career goals

Figure 3 indicates that knowledge workers feel responsible for their own careers and that they actively try to manage their careers through networking, gaining experience, and continual learning. The most important career strategy is the continual learning of new skills, which is done to a very large extent by 39% of respondents and to a large extent by 46% of the respondents. Such a strategy should result in knowledge workers reaching their long-term career goals (Marcus and Watters 2002, 91; Stokely 2008, 49). Mentors are consulted to a large extent by only 42% of respondents and to a very large extent by 22%. This finding differs from the findings of Lamb (2007, 83) that the decisions of knowledge workers are often supported by mentors and self-found sponsors. Knowledge workers need mentoring to ensure that knowledge sharing occurs and that an opportunity is provided for the individual being mentored to convert experience into knowledge (Harman and Brelade 2000, 73).

Satisfaction experienced by a knowledge worker

The descriptive statistics related to the satisfaction experienced in the careers of knowledge workers are shown in Table 3. Most knowledge workers feel that they achieve a sense of accomplishment. This finding is related to the findings of Dovey and White (2005, 253). Forty per cent of the respondents are very satisfied with their flexible work conditions, which corresponds with the findings by Lamb (2007, 75) that boundaryless careers are important to knowledge workers. The majority of respondents (36.3% very satisfied and 47.5% satisfied) indicate that they work on challenging assignments or projects. The results indicate that knowledge workers are in fact satisfied with their careers to a large extent, yet certain areas need to be looked at to ensure knowledge workers stay motivated. Table 5 indicates that 46.2% of knowledge workers are satisfied and 19.2% are very satisfied with their careers to date. This means that organizations should create a work environment that is aligned with the expectations of knowledge workers to allow them to achieve job satisfaction (Wong 2005, 273).

Table 5: Satisfaction experienced as a knowledge worker

	Very satisfied (% (n))	Satisfied (% (n))	Neutral (% (n))	Dissatisfied (% (n))	Very dissatisfied (% (n))
Being promoted based on what you know.	20.0 (16)	55.0 (44)	15.0 (12)	7.5 (6)	2.5 (2)
Being rewarded for your knowledge.	21.3 (17)	46.3 (37)	17.5 (14)	12.5 (10)	2.5 (2)
Flexible working conditions.	40.0 (32)	38.8 (31)	15.0 (12)	6.3 (5)	0.0 (0)
The contributions made by you as a knowledge worker.	37.5 (30)	48.8 (39)	7.5 (6)	6.3 (5)	0.0 (0)
Working on challenging assignments or projects.	36.3 (29)	47.5 (38)	13.8 (11)	2.5 (2)	0.0 (0)
A sense of accomplishment.	41.3 (33)	40.0 (32)	12.5 (10)	5.0 (4)	1.3 (1)
Opportunities for career advancement.	30.0 (24)	37.5 (30)	20.0 (16)	5.0 (4)	7.5 (6)
Career progress to date.	19.2 (15)	46.2 (36)	21.8 (17)	10.3 (8)	2.6 (2)

Limitations of research

The results of this exploratory study should be viewed in the context of its limitations. First, it was based on a relatively small, purposive sample of 90 respondents, which restricts the generalizability of the findings. Second, the majority of respondents were male and educated in the specialist areas of business or information technology, which limits comparison with previous research, as most studies reported in the literature focused on specialist areas such as engineering, law, and the health professions. Third, the measuring instrument, although moderately reliable, needs further refinement through, for example, adding more items to the questionnaire, reviewing the wording of items, and improving the layout.

Given the above limitations, generalization from the results of this exploratory study should be treated with caution. It is worth noting, however, that the findings of this study are mostly in line with the related prior research referred to in this study.

Conclusions and assessment of research

The results of the online survey provide an interesting look at the career issues South African knowledge workers studying at the University of Johannesburg experience. Some of the issues identified are the lack of importance placed upon organizational training, the lack of interest in temporary work assignments, and the low importance placed on learning from mentors. Organizations need to take note of their reward structures, as knowledge workers have indicated that promotions and rewards based on their knowledge is insufficient.

The means of production for knowledge workers is their knowledge, leading to high levels of job mobility. Knowledge workers are therefore willing to work not only as employees of organizations but as consultants or temporary workers. Using external knowledge workers brings specialized knowledge into organizations, which helps internal staff solve otherwise difficult problems. Organizations are only useful to knowledge workers if the workers can acquire new knowledge through working in that organization. The impact made by knowledge workers in the knowledge economy has prompted management to take note of the key issues affecting knowledge workers throughout their careers.

The findings of the research suggest that organizations need to understand that:

- Knowledge workers are motivated through recognition by peers, rewards, and monetary rewards. Without these incentives, they will lack the sense of achievement necessary to excel in their careers.
- Knowledge workers see internal training programs as incapable of delivering the training they require. Organizations should ensure that their training programs are innovative to ensure that they respond to the demands of a knowledge economy.
- A lifelong career with one organization is a thing of the past; knowledge workers are more concerned with lifelong learning and experiences gained through a succession of multiple jobs to gain the experience necessary to provide the organization with a competitive advantage.
- Challenging work assignments provide knowledge workers with a sense of purpose and achievement. Providing knowledge workers with a series of challenging work assignments better equips them to develop their careers.
- The lifespan of an organization is much less than the natural lifespan of a knowledge worker, and knowledge workers frequently outlive the organizations they work for. Knowledge workers therefore take control of their own careers as their careers consist of a series of projects or assignments, independent of the organizations employing them.

The findings of the research suggest that knowledge workers need to understand that:

- Autonomy of tasks and assignments enable them to take control over tasks assigned to them. The constraints in organizations do not always allow knowledge workers the freedom to take total control of tasks assigned to them, yet knowledge workers need to adapt to their organizational cultures to remain autonomous as much as possible.
- The responsibility for career development is a personal responsibility. Knowledge workers need to ensure that they obtain challenges that lead to a fulfilling career by getting involved in challenging work that provides learning opportunities.
- Mentors are needed if knowledge workers are to ensure that their entry into the knowledge economy leads to a successful career. Mentoring is essential for

ensuring that opportunities are provided for individuals to convert experience into knowledge.

- The motivation required to reach organizational goals should be closely aligned to personal career goals. Such a close alignment of goals leads to a sense of task achievement for knowledge workers, resulting in a satisfying career within the organization.
- Specialization may be more important than loyalty to many organizations, yet specialist skills may contribute to career success of knowledge workers within organizations, as specialization results in a diversity of knowledge and skills beneficial to any career.

To conclude, it can be stated that knowledge of the factors and issues affecting the career development of knowledge workers is essential for retaining, developing, and motivating knowledge workers. The major findings linked to the literature consulted indicate that even though knowledge workers require more knowledge just to enable them to perform their jobs, their knowledge still provides them with a competitive advantage in their careers and in the knowledge economy. In the same manner, knowledge workers acknowledged that they are personally responsible for their own career development and attempt to ensure that they partake in lifelong learning and training. The result of being able to match personal goals with organizational goals generates a sense of accomplishment for knowledge workers, which is required to build a fulfilling career.

Working on challenging assignments generates a sense of achievement that contributes to the personal and career growth of a knowledge worker. Knowledge workers should thus seek out organizations that provide challenging work environments that could lead to career growth.

Suggestions for future research

This article has described several issues affecting the career development of knowledge workers. Other researchers dealing with knowledge workers and the career development of knowledge workers may wish to explore further research as described below:

- This research study explored general, broad issues affecting the career development of knowledge workers in South Africa. Other researchers may wish to focus on one specific area—for example, the preparation knowledge workers take to embark on a knowledge career, or the career strategy that knowledge workers devise.
- This study surveyed the management of knowledge workers in South Africa. It would be interesting to determine if the situation differs in other countries (especially developed countries).
- An investigation into the rewards systems provided by organizations to knowledge workers may provide an interesting insight into why knowledge workers feel their contributions are not recognized.

- Organizational training and development programs need to be investigated to provide an understanding of the shortcomings of such programs. The need for better internal training and development programs should then be communicated to organizations to ensure that these programs live up to the expectations of knowledge workers.

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Appendix: Research Questionnaire

Career development of knowledge workers

Dear Participant,

Knowledge workers are considered to perform very little manual labour, and hence the issues they face in their careers are very different when compared to traditional hierarchical careers. The study aims to identify issues affecting knowledge workers in their careers and how these issues relate to career development of knowledge workers.

This research is undertaken as part of a masters mini-dissertation at the University of Johannesburg. The research supervisor is Prof. Adeline du Toit, Department of Information and Knowledge Management, Faculty of Management.

The questionnaire should take approximately 10 minutes to complete. Your personal information and your responses will be treated as highly confidential and will only be used for the purpose of the questionnaire.

The questionnaire uses a five-point scale for most questions. For each statement, only make a cross ("X") in the box which corresponds the best to your view, or by writing down your answer in the space provided.

There are no right or wrong answers, the only criteria being that you answer the questions in terms of your conviction and experience. When you have completed the questionnaire, please check that all the questions have been answered before returning the completed questionnaire.

Section A—Demographics

This section of the questionnaire refers to background or biographical information. Once again, we assure you that your response will remain anonymous. Your co-operation is appreciated.

Gender

Male	1
Female	2

Age (in years)

18–25	1
26–30	2
31–35	3
36–40	4
41–45	5
46–50	6
51–55	7
56+	8

Ethnicity

Black	1
White	2
Coloured	3
Indian or Asian	4

Field of specialization

Business, Accounting, Commerce, Economics	1
Sociology, Social Sciences	2
Computer Science, Engineering, Information Systems	3
Sciences: Health, Natural, Applied, Physical, Mathematical	4
Arts and Humanities	5
Legal	6
Other (please specify in the space provided below)	7

Type of employment

Permanent	1
Temporary (contracting)	2
Self employed	3
Other (please specify in the space provided below)	4

Length of employment at your current organization (in years)

Less than 1 year	1
1–2 years	2
2–3 years	3
3–4 years	4
5+ years	5

Your level of employment in the organization/company/institution

Senior management	1
Middle management	2
Junior management	3
Other (please specify in the space provided below)	4

Number of employees in the organization/company

0–50	1
51–100	2
101–200	3
201–500+	4

Section B — Career

PART A: Knowledge						
Question	This section explores <i>general aspects of knowledge in your working career</i> . Think about the impact knowledge has made on your working career thus far. Do you agree with the following statements regarding knowledge as used in your organization?	Totally agree	Agree	Neutral	Disagree	Totally disagree
A.1	Knowledge is a key factor in any decision made with regards to my career.	1	2	3	4	5
A.2	Knowledge is crucial in giving me a competitive advantage in my career.	1	2	3	4	5
A.3	My job requires more knowledge than it ever did before.	1	2	3	4	5
A.4	The higher my level of knowledge, the more rewards I will receive.	1	2	3	4	5

PART B: Knowledge development						
Question	This section explores the steps you have taken to <i>develop your knowledge</i> to further your career aspirations. Think about what you have done to increase your knowledge. To what extent do you agree with the following statements?	Totally agree	Agree	Neutral	Disagree	Totally disagree
B.1	My work as a knowledge worker enables me to obtain professional experience.	1	2	3	4	5
B.2	My work as a knowledge worker enables me to obtain management experience.	1	2	3	4	5
B.3	As a knowledge worker, I believe in life-long learning.	1	2	3	4	5
B.4	I am constantly updating my existing knowledge.	1	2	3	4	5
B.5	I am responsible for personal development.	1	2	3	4	5
B.6	I stay current with new developments and trends.	1	2	3	4	5

B.7	I use performance appraisals as a means to evaluate my level of knowledge.	1	2	3	4	5
B.8	I mainly use internal training to develop my knowledge.	1	2	3	4	5
B.9	I mainly use external training to develop my knowledge.	1	2	3	4	5

PART C: Career motivators

Question	This section explores the factors affecting <i>motivating you in your chosen knowledge career</i> . To what extent do these factors motivate you in your career as a knowledge worker?	No extent	Little extent	Neutral	Some extent	Large extent
C.1	Awards	1	2	3	4	5
C.2	Recognition from other knowledge professionals	1	2	3	4	5
C.3	Monetary rewards, including bonuses, salary	1	2	3	4	5
C.4	Challenging work assignments	1	2	3	4	5
C.5	Social status	1	2	3	4	5
C.6	Job security	1	2	3	4	5

PART D: Career readiness

Question	This section explores issues affecting <i>career readiness</i> of a knowledge career. Think about the factors that affect or have affected you when preparing for a knowledge career. To what extent do you agree with the following statements?	Totally agree	Agree	Neutral	Disagree	Totally disagree
D.1	I feel that I am in charge of my own knowledge career.	1	2	3	4	5
D.2	I adapt to any challenges in my career.	1	2	3	4	5
D.3	I see new technology as beneficial to my career.	1	2	3	4	5

D.4	I have created my own knowledge career strategy.	1	2	3	4	5
D.5	I have enough knowledge to kick off a fulfilling career.	1	2	3	4	5

PART E: Career goals

Question	This section explores your <i>career goals</i> . Think about what you would like to achieve in your knowledge career. How important are the following career goals?	Very important	Important	Neutral	Unimportant	Very unimportant
E.1	A managerial role in the organization.	1	2	3	4	5
E.2	Frequent promotion.	1	2	3	4	5
E.3	Matching my career goals with the organisational goals.	1	2	3	4	5
E.4	Working independently.	1	2	3	4	5
E.5	Growing my career within my current organization.	1	2	3	4	5
E.6	Joining an organization with a renowned training program.	1	2	3	4	5

PART F: Career path

Question	This section explores your <i>career path</i> as a knowledge worker. From a professional point of view, think about what the future may hold for your career. How important are the following issues for your career path?	Very important	Important	Neutral	Unimportant	Very unimportant
F.1	Dual career ladders (managerial and professional options).	1	2	3	4	5
F.2	Becoming a specialist in my field of knowledge.	1	2	3	4	5

F.3	Lifetime employment with a single organization.	1	2	3	4	5
F.4	A portfolio of multiple jobs with different organizations over the lifetime of my career.	1	2	3	4	5
F.5	Temporary work assignments followed by short periods of unemployment.	1	2	3	4	5

PART G: Career strategy

Question		To no extent	To a small extent	To a moderate extent	To a extent	To a very large extent
G.1	Take responsibility for my own knowledge career.	1	2	3	4	5
G.2	Build networks of contacts in the knowledge industry.	1	2	3	4	5
G.2	Consult mentors in my field of knowledge.	1	2	3	4	5
G.3	Increase my breadth of knowledge to further my career.	1	2	3	4	5
G.4	Increase my breadth of experience to further my career.	1	2	3	4	5
G.5	Continually learn new skills to improve my work.	1	2	3	4	5
G.6	Continuously try to do more than is expected of me.	1	2	3	4	5

PART H: Social and team aspects of knowledge					
Question	This section explores the <i>social and team</i> aspects of your knowledge career. Think about the way in which social interactions impact your career decisions. What advantage does the following social factors add to your career development?	Great advantage	Some advantage	Little advantage	No advantage
H.1	Networking with other knowledge professionals.	1	2	3	4
H.2	Building relationships with team members.	1	2	3	4
H.3	Good mentors.	1	2	3	4
H.4	Good management.	1	2	3	4
H.5	Being considered a partner and not a subordinate in the organization.	1	2	3	4
H.6	Good communication skills.	1	2	3	4
H.7	Being a team player.	1	2	3	4

PART I: Satisfaction experienced as a knowledge worker						
Question	This section explores <i>aspects related to your career satisfaction</i> as it relates to your knowledge career. Career satisfaction relates to the overall level of happiness as experienced through your choice of a knowledge career. How satisfied are you with the following aspects of your knowledge career?	Very satisfied	Satisfied	Neutral	Dissatisfied	Very dissatisfied
I.1	Being promoted based on what you know.	1	2	3	4	5
I.2	Being rewarded for your knowledge.	1	2	3	4	5
I.3	Flexible working conditions.	1	2	3	4	5
I.4	The contributions made by you as a knowledge worker.	1	2	3	4	5
I.5	Working on challenging assignments or projects.	1	2	3	4	5
I.6	A sense of accomplishment.	1	2	3	4	5
I.7	Opportunities for career advancement.	1	2	3	4	5
I.8	Career progress to date.	1	2	3	4	5