An empirical investigation into the relationships among knowledge sharing behaviour, organizational citizenship behaviour, job satisfaction and organizational commitment

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Dedicated to my family — past, present, and future ....

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Abstract

This study argues that knowledge sharing behaviour is a kind of organizational citizenship behaviour and that as such (i) the two should be strongly positively correlated and that (ii) strong predictors of organizational citizenship behaviour should also strongly predict knowledge sharing behaviour. Since the organizational behaviour literature identifies job satisfaction and organizational commitment as robust predictors of organizational citizenship behaviour, the study investigated the interrelationships among knowledge sharing behaviour, organizational citizenship behaviour, job satisfaction, and organizational commitment. The study employed a correlational survey design, sourcing the empirical data from secondary school teachers in a number of schools in and around Gaborone, Botswana. As expected, knowledge sharing behaviour and organizational citizenship behaviour were significantly positively correlated, organizational commitment was a significant predictor of organizational citizenship behaviour, and job satisfaction and organizational commitment were significantly positively correlated. Contrary to expectations, however, both job satisfaction and organizational commitment were unrelated to knowledge sharing behaviour. Not all study hypotheses were supported, and as such, it would be premature to conclude, on the strength of the evidence presented in this thesis, that knowledge sharing behaviour indeed is a kind of organizational citizenship behaviour. Nevertheless, the positive correlation between knowledge sharing behaviour and organizational citizenship behaviour would seem to suggest that the role of organizational citizenship behaviour in organizational knowledge sharing is worth investigating further.

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Chapter 1

Introduction

1.1 Background

1.1.1 Achieving competitive advantage

The fundamental question in the field of strategic management is how organizations achieve and sustain competitive advantage (Teece *et al.*, 1997, p.509). Over the years, strategy researchers have developed a number of frameworks intended to help organizations achieve competitive advantage. In the 1980's, the dominant approach was that due to Porter (1979, 1980). Seminal though it was, Porter's industry-analytic approach, particularly as exemplified by his Five Forces Model, was later criticised (Zack, 1999) for ignoring the role of individual firm characteristics in achieving competitiveness. Indeed, as Powell (1996) notes, empirical studies that investigated the role of industry membership in the generation of competitive advantage consistently reported that it accounted for no more than $17 - 20\%$ of financial performance. Consequently, from the mid 1980s onwards, researchers (Barney, 1991; Wernerfelt, 1984) began to look within the organization for sources of competitive advantage, in the process developing what has come to be known as the "resource-based view".

The resource-based view perceives the organization as a bundle of resources and capabilities that may potentially lead to competitive advantage. In this context, resource refers to "anything that could be thought of as a strength or weakness of a given firm", or, more formally, "those (tangible and intangible)

assets which are tied semi-permanently to the firm" (Wernerfelt, 1984, p.172), such as machinery, skilled personnel and efficient procedures. However, resources on their own are not productive; the organization needs to have the capacity to mobilize resources and put them to productive use (Grant, 2005). Thus, an organization may prosper because it has access to superior resources. More likely, however, an organization "may [prosper] not because it has better resources, but rather the [organization]'s distinctive use of resources involves making better use of its resources" (Mahoney & Pandian, 1992, p.365).

Isolating knowledge as the key source of sustainable competitive advantage, researchers (Grant, 1996; Nonaka *et al.*, 2000; Prahalad & Hamel, 1990; Spender, 1996) have further refined the resource-based view to form the knowledge-based view. To be sure, in arguing that resources and capabilities determine an organization's strategy and performance, the resource-based view does acknowledge the role of knowledge — embedded in routines and capabilities — in organizational success. However, the knowledge-based view goes further and argues that organizations exist to integrate knowledge. As Kogut & Zander (1992, p.383-384) put it,

> "...what firms do better than markets is the sharing and transfer of
> the knowledge of individuals and groups within an organization [i.e.]
> organizations are social communities in which individual and social
> expertise is transformed into economically useful products and services
> by the application of a set of higher-order organizing principles".

In the knowledge-based view, then, the organization is perceived "... as a dynamic, evolving, quasi-autonomous system of knowledge production and application" (Spender, 1996, p.59), whose "primary role [is] integrating the specialist knowledge resident in individuals into goods and services" (Grant, 1996, p.120). In essence, the knowledge-based view maintains that if — as the resource-based view suggests — "... control over scarce resources is the key source of economic profits, then ... such issues as skill acquisition, the management of knowledge and know-how, and learning become fundamental ..." (Teece *et al.*, 1997, p.514). In a real sense, then, knowledge management can be seen as a direct consequence of both the resource-based view, and, more directly, the knowledge-based view:

if knowledge is such an important resource, should it not be properly managed? However, the emergence of knowledge management was driven not just by concerns in the academic community, but also by developments in the practice of strategic management.

In the practitioner community, one key driver of knowledge management was the effect of the re-engineering movement of the 1990s; faced with such challenges as increasing domain complexity, accelerating market volatility, and the emergence of a global economy in which competitors could literally be anywhere on earth (Becerra-Fernandez *et al.*, 2004; Laudon & Laudon, 2002) many business found themselves struggling to stay afloat. When many responded by shedding staff in order to be *lean and mean*, new challenges emerged: efforts to cut costs by reducing staff invariably led to the loss of valuable expertise (Becerra-Fernandez *et al.*, 2004), in turn leading to loss of competitiveness, and, ultimately, profits. Thus knowledge management was in part fueled by the desire for companies to retain the knowledge and expertise of their employees even as such employees retired or otherwise left the company.

An important factor underlying increasing turbulence in business environments was the widespread use of information and communications technology (Wang, 2005), both because it makes remote markets and resources easier to access, but also because — through the use of standardised software packages (e.g. in Accounting) — it made it easy even for smaller companies to adopt well-tested business practices. In turn, turbulence in business environments accentuated the role of knowledge in ensuring that organizations respond quickly to ever changing market conditions. Consequently, *extracting* and *storing* knowledge were common themes in the early definitions of knowledge management, a sample list of which is provided by Awad & Ghaziri (2004).

Whether one emphasises its "academic" or "practitioner" origins, it can be said that the emergence of knowledge management as a discipline is testimony to the rising importance of knowledge in contemporary economies. As Becerra-Fernandez *et al.* (2004, p.2) posit, "knowledge management may simply be defined as *doing what is needed to get the most out of knowledge resources*". But what precisely is knowledge?

1.1.2 Defining 'knowledge'

Knowledge has been a subject of inquiry since antiquity, yet no universally accepted definition of the concept has been found. Commonly, knowledge is contextualised in a hierarchy that begins with data, rises through information, to knowledge and wisdom; this framework is discussed comprehensively in Rowley (2007). In this framework, data are seen as "unorganized and unprocessed facts", information as "an aggregation of data that makes decision making easier", knowledge as "understanding of information based on its perceived importance or relevance to a problem area", and wisdom as "vision, foresight, and the ability to see beyond the horizon" (Awad & Ghaziri, 2004, p.36-40).

Drawing from the earlier work of philosopher Michael Polanyi (Polanyi, 1967), Ikujiro Nonaka (Nonaka, 1991; Nonaka & Takeuchi, 1995) popularised the notion that knowledge can be either tacit or explicit. According to Nonaka (1991, p.98):

> " *Explicit knowledge is formal and systematic. For this reason, it can be easily communicated and shared, in product specifications or a scientific formula or a computer program.*
>
> *Tacit knowledge … is not so easily expressible … It is hard to formalize, and,therefore, difficult to communicate to others … Tacit knowledge is deeply rooted in action and in an individual's commitment to a specific context — a craft or profession, a particular technology or product market, or the activities of a work group or team. Tacit knowledge consists partly of technical skills — the kind of informal hard–to–pin–down skills captured in the term "know–how" … At the same time, tacit knowledge has an important cognitive dimension. It consists of mental models, beliefs and perspectives so ingrained we take them for granted, and therefore cannot easily articulate them. For this very reason, these implicit models profoundly shape how we perceive the world around us. "*

Grant (2007) notes that Nonaka appears to have misunderstood Polanyi, and that subsequently, other authors have either uncritically accepted Nonaka's arguments, or repeated his version of Polanyi's philosophy without reading Polanyi

himself. Grant notes that in Polanyi's view, tacit and explicit knowledge were not seen as two separate dimensions of knowledge; rather, tacit knowledge provided a background against which explicit knowledge may be viewed. Despite these criticisms, Nonaka's work has had a lasting impact on knowledge management, and was particularly influential on the early approaches in which the emphasis was on converting tacit knowledge into explicit knowledge which could then be captured in electronic knowledge repositories and other knowledge bearing artefacts.

Somewhat analogous to Nonaka's tacit – explicit knowledge dichotomy, Becerra-Fernandez *et al.* (2004) note that knowledge can be viewed either subjectively or objectively, with the two perspectives differing on their attitude to reality: while the former views reality as being socially constructed, the latter views it as being independent of human perceptions. Viewed subjectively, knowledge has "no existence independent of social practices and human experiences", but exists either as a state of mind, or as practice: when knowledge is considered the state of an individual's mind, the beliefs of individuals within organizations collectively constitute the organization's knowledge; conversely, when knowledge is equated to practice, it is considered to be "held by a group, and not decomposable into elements possessed by individuals" (p.17). Viewed objectively, knowledge becomes storable, malleable — as something that can be extracted from human *knowers* and stored in knowledge management systems.

A distinction is sometimes drawn between declarative and procedural knowledge. According to Becerra-Fernandez *et al.* (2004, p.19), declarative knowledge "focuses on the beliefs about relationships among variables ... and can be stated in the form of propositions, expected correlations, or formulas relating concepts represented as variables"; procedural knowledge, on the other hand, "focuses on beliefs relating sequences of steps or actions to desired (or undesired) outcomes". As an example of declarative knowledge Becerra-Fernandez *et al.* (2004) cite the knowledge that the price of an item might influence the number of units sold; an example of procedural knowledge they give is the set of justified beliefs about the procedures to be followed when selecting who to award a contract to. Similarly, authors sometimes distinguish among *know-what*, referring to knowledge of facts, *know-why* referring to "knowledge about principles and laws of motion in nature, in the human mind, and in society", *know-how* referring to skills and the ability

to do something, and *know-who*, which involves "information about who knows what and who knows what to do", as well as "the social ability to co-operate and communicate with different kinds of people and experts" (OECD, 2000).

In addition to Nonaka (1991)'s tacit and explicit categories of knowledge, Choo (1995) discussed a third type of knowledge, namely background knowledge, which is "... part of the organizational culture, is communicated through oral and verbal texts such as stories, metaphors, analogies, visions, and mindsets" and "promotes commitment through the creation of shared meaning and values". Similar sentiments were expressed by Alavi & Leidner (2001, p.108) according to whom "knowledge [can be] embedded in and carried through multiple entities including organizational culture and identity, routines, policies, systems and documents, as well as individual employees". Becerra-Fernandez *et al.* (2004) also note that knowledge can exist in people (both individuals and groups), artefacts (such as organizational routines and knowledge repositories), and organizational entities (such as organizations, their units, and inter-organizational relationships).

The preceding review shows that perspectives of what constitutes knowledge abound in the literature. For the purposes of this study, Davenport & Prusak (2000, p.5)'s definition of knowledge is adopted:

> *"Knowledge is a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information ... In organizations, it often becomes embedded not only in documents or repositories but also in organizational routines, processes, practices, and norms".*

Furthermore, following the example of Wang (2005), it is accepted that sharing knowledge invariably involves sharing information, and as such, the distinction between knowledge and information is not unduly emphasised in this study.

Having thus defined knowledge, the next question becomes: what, then, does 'doing knowledge management' entail? This question is deliberately framed this way — rather than, say, "what does managing knowledge entail?" — because as pointed out in the next section, knowledge *per se*, cannot be managed.

1.1.3   Knowledge management

Hansen *et al.* (1999) identified two main approaches to 'doing' knowledge management: the personalization approach, which places emphasis on the role of human interactions in creating and sharing knowledge, and the codification approach, which emphasises the role of technology in the capture, storage, and distribution of knowledge. Broadly, the personalisation approach can be seen as following the view that knowledge is subjective and inseparable from human 'knowers', while the codification approach assumes the objective view of knowledge, and therefore sees knowledge as storable. Wang (2005, p.6) notes that personalization strategies "include water-cooler work-related conversations, returning phone calls from colleagues who need help, and meetings", while "companies who adopt a codification ... strategy focus on having knowledge stored in the technological [knowledge management system] that may be accessed by employees". Similarly, Mentzas *et al.* (2002), who distinguish between product and process oriented approaches to knowledge management — corresponding to codification and personalization strategies — note that while the former tends to invest heavily in information technologies, the latter's investment in technology is modest; while the former uses technological solutions for storing knowledge, the latter uses technology for person-to-person interactions.

Another useful knowledge management classificatory framework was devised by Earl (2001) who identified a number of schools of knowledge management based on intended outcomes of the selected interventions and the tools and approaches they used. For instance, interventions that focus on knowledge directories are labeled 'cartographic' while those that focus on processes are labeled 'engineering'. Similarly, interventions that seek to develop knowledge bases are labeled 'systems'. Other schools are the 'economic' school, which seeks to "[create] revenue streams from the exploitation of knowledge and intellectual capital" (p.218), and the 'organizational', 'spatial', and 'strategic' schools, which are 'behavioural' in orientation, aimed as they are at "stimulating and orchestrating managers and managements to be proactive in the creating, sharing, and use of knowledge as resource" (p.218). Finally, the strategic school "sees knowledge management as a dimension of competitive advantage" (p.227). This framework

allows managers to consider knowledge management from a multiplicity of perspectives, as well as to compare their approaches to those of leading organizations elsewhere.

Holsapple & Joshi (2002) developed quite a comprehensive framework that sought to "[identify] and characterize the main elements of [knowledge management] and their relationships" (p.47). The framework identifies the knowledge resources to be managed (such as human cognitive skills and the processing abilities of computer systems) and the activities involving the management of these resources (e.g. selection, use, and internalisation), but also recognises factors that influence the conduct of knowledge management (e.g. leadership, coordination, as well as environmental influences). The utility of the framework derives from its ability to facilitate a holistic approach to knowledge management.

Kurtz & Snowden (2003) discuss the Cynefin framework which "... challenge[s] the universality of three basic assumptions prevalent in organizational decision support and strategy: assumptions of order, of rational choice, and of intent". The framework classifies the internal and external business environments into the knowable, known, chaos, and complex domains; in the complex domain, "cause and effect are only coherent in retrospect and do not repeat"; in the knowable domain, "cause and effect separate over time and space"; in the chaos domain, "no cause and effect relationships [are] perceivable"; finally, in the known domain, "cause and effect relations are repeatable, perceivable, and predictable" (Kurtz & Snowden, 2003, p.468). Kurtz & Snowden point out that the framework is not a categorization framework, and as such "none of the domains is more desirable than any other"; rather, "the framework is used primarily to consider the dynamics of situations, perspectives, conflicts, and changes in order to come to a consensus for decision making under uncertainty" (p.468).

Of the various views, definitions, and frameworks that seek to explicate knowledge management, two in particular have influenced our perception of knowledge management. The first is by Firestone & McElroy (2002, p.9) who usefully distinguish between knowledge management, and knowledge processing:

> "Knowledge processing is the cycle ... through which people in organizations, in response to business processes, collectively engage in

*knowledge production and integration. Knowledge processes, there-
fore are social processes through which organizations make and share
knowledge. … Knowledge management … is a management activity
that seeks to enhance knowledge processing. [Thus,] the purpose of
knowledge management is to enhance an organization's ability to per-
form knowledge processing, and ultimately by improving it, to enhance
the quality of its business process behaviour and its ability to adapt to
its environment".*

The second is by Botha & Fouché (2002, p.282) who observe that:

*"Although there is no clear consensus on the definition of knowledge,
there seems to be a general agreement that knowledge as such can-
not be managed. However, the context in which knowledge is created,
shared, and utilised can be improved through management action. It is
this context, namely the organisational environment in which knowl-
edge resources are levered to become a critical production factor, which
needs to be managed. The activities aimed at promoting this objective
are somewhat loosely referred to as knowledge management practices".*

As these two quotations indicate, contrary to what the phrase "knowledge
management" might suggest, knowledge management is not about managing
knowledge (this is similar to saying that "organizational behaviour" is not the
study of how organizations behave!). Rather, knowledge management seeks to
study and influence the context in which *people* create, share, and generally ex-
ploit knowledge. This perspective forms the bedrock upon which this thesis in
built.

1.1.4 Knowledge management in schools

Although schools "trade in knowledge" — so to speak — there is a dearth of
studies or initiatives focusing on knowledge management in schools; the few stud-
ies reported in the literature have tended to focus on information management
systems and library and information technology (Edge, 2005). The potential

benefits of knowledge management to schools, however, are huge. For instance, Kapeliuk *et al.* (2004) explored the use of knowledge management systems for school dropout prevention; the study concluded that the systems had a "remarkable potential for improving attendance officers' work and their understanding and perception of their work" (p.342). In her study of knowledge management in a public school district, Edge concluded that "the district has been quite successful at building a culture of sharing ..." (p.49). While knowledge management in general holds great promise for schools, knowledge sharing in particular, appears to hold the greatest promise. Furthermore, it would appear that in light of Edge's observation that knowledge management research and initiatives in schools have tended to restrict themselves to issues of information management and the related technology, studies that take a human-centred approach are to be encouraged.

1.1.5   Knowledge sharing

Knowledge sharing occupies a central place in knowledge management. In the framework developed by Firestone & McElroy (2002), two main knowledge processes are identified, namely, knowledge production and knowledge integration. While the former includes such activities as individual and group learning, the latter is concerned with broadcasting, searching, teaching, and sharing knowledge. This framework, like others in the literature — such as that suggested by Holsapple & Joshi (2002) — identifies knowledge sharing as an important process in the lifecycle of knowledge in organizations. Indeed, Bouthillier & Shearer (2002), contend that the focus of knowledge management is knowledge sharing.

Earlier, it was noted that according to the knowledge-based view, firms exist to create and integrate knowledge, or, in the words of Nonaka (1991), the central activity of a "knowledge creating" company is making personal knowledge available to others. However, "without the participation of individuals knowledge cannot be shared, or created even with the best networks or software in the world" (Wang, 2005, p.8). As Ipe (2003, p.337) observes, "if organizations [are] to capitalize on the knowledge they posses, they have to understand how knowledge is created, shared, and used within organizations". Thus, knowledge sharing allows organizations to avoid continuously reinventing the wheel, so to speak, and

is widely acknowledged in the many definitions and frameworks (Alavi & Leidner, 2001; Firestone & McElroy, 2002) of knowledge management discussed in the literature. Furthermore, empirical studies consistently report positive correlations between knowledge sharing and a number of desirable organizational outcomes: organizational performance (Du *et al.*, 2007), firm innovation capability (Lin, 2007b), organizational learning (Yang, 2007a), organizational marketing effectiveness (Chen, 2006), and IS/IT strategic planning effectiveness (Pai, 2006). In the study by Jacobs & Roodt 2007, knowledge sharing even negatively correlated with turnover intentions!

Formally, knowledge sharing refers to "behaviour by which an individual voluntarily provides other social actors (both within and outside an organization) with access to his or her unique knowledge and experiences" (Hansen & Avital, 2005, p.6). Two aspects of this definition of knowledge sharing immediately stand out. Firstly, knowledge sharing occurs between individuals, and is thus different from knowledge transfer which occurs between larger organizational entities such as departments and organizations themselves (see Ipe 2003). Secondly, knowledge sharing is voluntary — and we come back to this point later in this chapter when we link knowledge sharing to organizational citizenship behaviour.

Empirical studies have identified a number of antecedents of knowledge sharing behaviour. Ipe (2003) conveniently placed them into four main groups, namely, (i) the nature of knowledge, (ii) motivation to share, (iii) opportunity to share, and (iv) the culture of the work environment. For instance, explicit knowledge, being easily modifiable, would be easier to share than tacit knowledge. With respect to the motivation to share knowledge, empirical studies have shown that factors such as enjoyment helping others and self-efficacy can be strong motivators of knowledge sharing behaviour (Lin, 2007b). However, even when individuals feel motivated to share knowledge, such sharing will be subject to the availability of the opportunity to do so, with information and communications technology — frequently in the form of electronic knowledge repositories — routinely used to facilitate knowledge sharing (Cabrera *et al.*, 2006). The culture of the work environment too, plays an important role, with researchers reporting that dimensions such as communication climate and organizational justice do in

fact influence knowledge sharing behaviour (Kim & Lee, 2006). A fuller review of the knowledge sharing literature is provided later in this thesis.

It would be useful to view this study against the backdrop of the distinction between knowledge processing and knowledge management provided by both Firestone & McElroy (2002) and Botha & Fouché (2002). Because the study is concerned with factors in the contextual milieu within which knowledge sharing occurs, it can be seen that the study falls squarely within the realm of knowledge management: it seeks to identify ways and means by which organizations can enhance knowledge processing, with the specific process considered being knowledge sharing.

1.2 Statement of the problem

Knowledge is widely regarded as a key source of sustainable competitive advantage, and some studies — such as (Bontis, 1999) — have found knowledge management to be positively related to organizational performance. Furthermore, knowledge sharing occupies a central place in knowledge management, and has been shown to be positively related to a number of desirable organizational variables, including organizational performance (Chen, 2006; Du *et al.*, 2007; Jacobs & Roodt, 2007; Lin, 2007b; Pai, 2006; Yang, 2007a). Not surprisingly, knowledge sharing in organizations has been the subject of a large number of empirical studies (see Chapter 2). However, although knowledge sharing in the workplace is organizational behaviour — i.e. behaviour that people engage in within the context of organizations — knowledge sharing researchers have generally not directly and explicitly drawn from the discipline of organizational behaviour.

One particular concept studied in organizational behaviour that appears closely related to knowledge sharing behaviour is organizational citizenship behaviour: both are considered discretionary, and both have been shown to be positively related to organizational performance. Indeed, some knowledge sharing researchers (Bock & Kim, 2002; Cabrera & Cabrera, 2005; Connelly & Kelloway, 2003; Kelloway & Barling, 2000) have hinted at this similarity, with Cabrera & Cabrera even suggesting that antecedents of organizational citizenship behaviour may also

turn out to be antecedents of knowledge sharing behaviour. Nevertheless, empirical research into the relationship between knowledge sharing behaviour and organizational citizenship behaviour remains scarce.

The research hypothesis guiding the present study is that knowledge sharing behaviour is a kind of organizational citizenship behaviour. Now, if knowledge sharing behaviour is considered a type of organizational citizenship behaviour, then, firstly, the two must be correlated, and, secondly, the antecedents of organizational citizenship behaviour must also be antecedents of knowledge sharing behaviour. The organizational citizenship behaviour literature indicates that the main antecedents of organizational citizenship behaviour are job satisfaction and organizational commitment (Organ & Ryan, 1995; Podsakoff *et al.*, 2000). This study, therefore, empirically investigates the relationships among knowledge sharing behaviour, organizational citizenship behaviour, job satisfaction, and organizational commitment.

1.3   Research questions

The present study seeks to answer the following research questions:

1. What is the nature of the relationship between organizational citizenship behaviour and knowledge sharing behaviour?

2. How is job satisfaction related to organizational citizenship behaviour?

3. How is organizational commitment related to organizational citizenship behaviour?

4. How is job satisfaction related to knowledge sharing behaviour?

5. How is organizational commitment related to knowledge sharing behaviour?

6. How are job satisfaction and organizational commitment related?

7. Can a structural equation model be built relating knowledge sharing behaviour, organizational citizenship behaviour, job satisfaction, and organizational commitment?

8. Do demographic variables (age, gender, organizational tenure, and occupational tenure) influence each of knowledge sharing behaviour, organizational citizenship behaviour, job satisfaction, and organizational commitment?

1.4 Delimitations

This study seeks to test whether knowledge sharing behaviour and organizational citizenship behaviour are correlated, and whether predictors of organizational citizenship behaviour will also be predictors of knowledge sharing behaviour. To make the study manageable, only two correlates of organizational citizenship behaviour are considered, namely job satisfaction and organizational commitment. Furthermore, to ensure high questionnaire returns rates, and the collection of good quality data, the study is limited to an area that can be physically visited to distribute and collect questionnaires.

1.5 Assumptions

This study uses self-administered survey instruments to generate its data. An important assumption being made is that respondents understand the questions, posed in the English language, on the survey instruments. This assumption is considered realistic given that respondents are all educated to degree level or above, and have gone through an educational system whose primary language of instruction is English. The study also assumes that cultural differences between the context in which the instruments were developed and that in which they are now being used will not influence the responses provided. Finally, it is assumed that respondents will truthfully respond to all questions.

1.6 Limitations

As noted above, this study is limited to a small geographical area that can be physically visited to distribute and collect questionnaires. While important benefits, in the form of high response rates and good quality data, are expected to

accrue from this, it does mean that the study findings will not be directly statistically generalisable to any larger population. Additionally, since the study is cross-sectional and correlational, it cannot be used to vouch for cause-effect relationships among the variables studied. Other factors that may negatively affect the study are social desirability bias and, because all instruments are distributed as one package, common method bias. Despite these limitations, the study should still yield useful insights into the relationships among the variables considered, and thus make important contributions to the literature.

1.7 Definition of core concepts

1.7.1 Knowledge sharing behaviour

Knowledge sharing behaviour is " ... behaviour by which an individual voluntarily provides other social actors (both within and outside an organization) with access to his or her unique knowledge and experiences" (Hansen & Avital, 2005, p.6). It is important to distinguish between knowledge sharing and knowledge transfer: while the former occurs between individual employees, the latter involves larger organizational entities such as departments and organizations themselves (Ipe, 2003).

It is also useful to distinguish — as van den Hooff & de Ridder (2004, p.118) do — between knowledge donating and knowledge collecting: knowledge donating refers to "communicating to others what one's personal intellectual capital is" while knowledge collecting is "consulting colleagues in order to get them to share their intellectual capital". As van den Hooff & de Ridder further note, both processes are active i.e. in donating, the individual who plays the role of *knowledge source* actively communicates his or her knowledge to others, while in the role of *knowledge receiver* the individual actively seeks out knowledge from others.

1.7.2 Organizational citizenship behaviour

Organizational citizenship behaviour refers to "individual behaviour that is discretionary, not directly or explicitly recognized by the formal reward system, and

in aggregate promotes the efficient and effective functioning of the organization" (Organ *et al.*, 2006, p.3).

1.7.3   Job satisfaction and organizational commitment

Job satisfaction and organizational commitment are attitudes that people exhibit in the work place. Job satisfaction reflects how people feel about their job, or aspects of their job, such as pay, supervision, and co-workers (Spector, 2003). Organizational commitment, on the other hand, seeks to measure the devotion and loyalty that an employee feels towards his or her employing organization. Mowday *et al.* (1982), cited in Pierce *et al.* (2002, p.200), defined it as "the relative strength of an individual's identification with, and involvement in, a particular organization".

1.8   Thesis structure

The five chapter thesis structure often recommended for empirical studies in the quantitative research tradition (Perry, 1998) forms the framework around which this thesis is built. Following this tradition, a thesis has five chapters, namely, introduction, literature review, methods, data analysis, conclusions. This thesis deviates somewhat from this format in so far as the literature review presented herein is spread over two chapters. Thus, following this introductory chapter, Chapter 2 presents a review of the knowledge sharing literature, taking care to focus specifically on empirical studies; the chapter concludes that while a large number of empirical studies have investigated the antecedents of knowledge sharing behaviour in organizational contexts, the important place of organizational behaviour — particularly organizational citizenship behaviour — in knowledge sharing remains largely ignored.

As indicated earlier, the key thesis of this study is that knowledge sharing behaviour is a type of organizational citizenship behaviour; as such, it is argued that the two should thus be correlated, and that the predictors of organizational citizenship behaviour should also be predictors of knowledge sharing behaviour.

Chapter 3, therefore, is a review of the organizational citizenship behaviour literature, focusing on its dimensions and correlates, and giving special attentions to job satisfaction and organizational commitment, two workplace attitudes that have been consistently found to be strong predictors of organizational citizenship behaviour; because these constructs are not *native* to Information Science, an attempt was made to ensure that the review was comprehensive. Issues of research design and methods are discussed in Chapter 4, and the data analysis presented in Chapter 5. Finally, in Chapter 6, the discussion and study conclusions and recommendations are presented.

It should be emphasised that this thesis investigates the relationships among the constructs knowledge sharing behaviour, organizational citizenship behaviour, job satisfaction, and organizational commitment — and not knowledge sharing behaviour among teachers. Nevertheless, the empirical component of the study considers data generated from a sample of teachers drawn from senior secondary schools in and around Gaborone, Botswana. Consequently, appropriate sections of the thesis do pay specific attention to the behaviour of the study constructs within school environments.

Chapter 2

Antecedents of knowledge sharing behaviour

2.1   Introduction

This chapter presents a review of the empirical literature on the antecedents of knowledge sharing behaviour in organizational settings. The chapter is built around Ipe's 2003 knowledge sharing conceptual framework, reproduced here as Figure 2.1 (see page 20). Developed after a comprehensive literature review covering such as areas as management theory, strategic management, information and decision sciences, organizational communication, and organizational behaviour, the framework groups the antecedents of knowledge sharing behaviour into (i) the nature of knowledge, (ii) motivation to share, (iii) opportunities to share, and (iv) the culture of the work environment. The chapter itself is structured as follows. The first section discusses how knowledge sharing has generally been conceptualised as the dependent variable in the empirical literature. The second section explores the relationship between knowledge sharing behaviour and demographic variables. The discussion then follows Ipe's framework closely, with four sections devoted to each of the four components of the framework. In each of these sections, the relevant component of the framework is first discussed, before the empirical studies themselves are reviewed. But Ipe also maintains that as well as influencing knowledge sharing behaviour individually, the four factors also interact and collectively influence knowledge sharing behaviour; consequently, one

section of this chapter is devoted to these interactions. The final section draws some conclusions, and also highlights areas that deserve further research attention.

2.2 Knowledge sharing as a 'dependent' variable

Although the studies reviewed in this chapter can all be said to have made knowledge sharing their dependent variable, it is important to note that there are significant differences in the way that they conceptualise it: some were concerned with actual knowledge sharing while others focused on the intention to share knowledge, or even attitudes around knowledge sharing. Studies that considered actual knowledge sharing include those by Van den Hooff and colleagues (de Vries *et al.*, 2006; van den Hooff & de Leeuw van Weenen, 2004; van den Hooff & de Ridder, 2004) which used self-reports to measure both knowledge donation and collection generally, and those that investigated knowledge sharing via knowledge management systems (e.g. Kankanhalli *et al.*, 2005). Even among the attitudinal studies, differences are evident; for instance, while Ryu *et al.* (2003) considered attitudes towards knowledge sharing, de Vries *et al.* (2006) were interested in eagerness and willingness to share knowledge.

The many differences in the dependent variable in many a knowledge sharing study is symptomatic of the various theoretical frameworks that have guided such studies, which include the following: social cognitive theory (Hsu *et al.*, 2007; Chiu *et al.*, 2006; Bock & Kim, 2002), social capital theory (Bakker *et al.*, 2006; Chiu *et al.*, 2006; Wah *et al.*, 2005; Wasko & Faraj, 2005), economic and social exchange theories (Kankanhalli *et al.*, 2005; Bock & Kim, 2002), the theory of reasoned action or the theory of planned behaviour (Kwok & Gao, 2006; Bock *et al.*, 2005; So & Bolloju, 2005; Ryu *et al.*, 2003; Bock & Kim, 2002). Others, such as Lin (2007a), Chen & Barnes (2006), Kim & Lee (2006), and Ruppel & Harrington (2001) have drawn from the organizational behaviour literature.

The focus of this review is on the antecedents of knowledge sharing behaviour, and since attitudes towards knowledge sharing, intentions to share knowledge, and
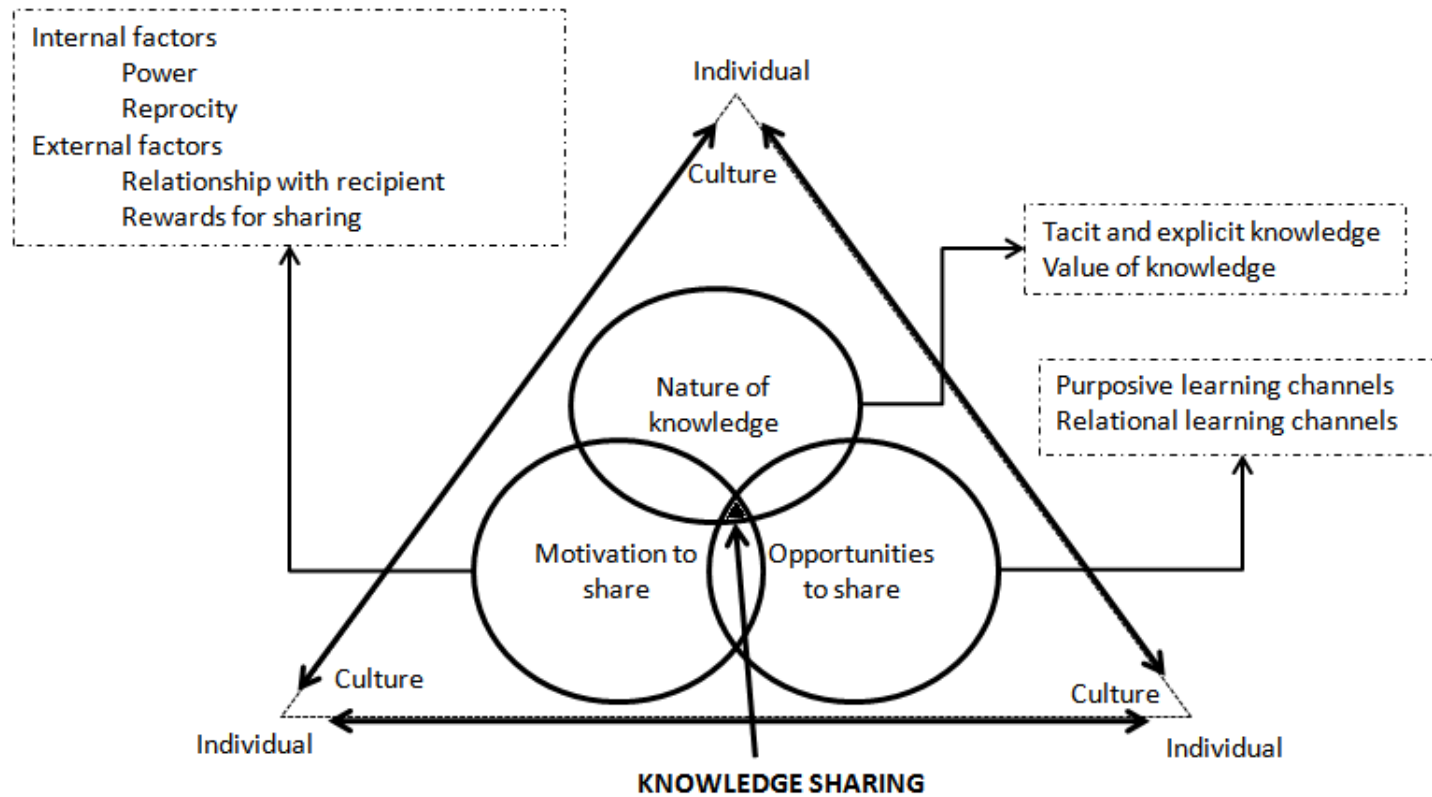
Figure 2.1: Ipe's 2003 knowledge sharing conceptual framework

actual knowledge sharing — whether measured through self-reports or actual contributions to a knowledge management system — are considered crucial to knowledge sharing, we have not attempted to distinguish among the various ways in which knowledge sharing was ultimately conceptualised, focusing instead on its antecedents.

2.3 Demographic variables and knowledge sharing behaviour

The few studies that have investigated the role of demographic variables in knowledge sharing suggest that such variables may be important antecedents of knowledge sharing behaviour. For instance, drawing from social network theory, Lin (2006) found that gender moderated the effect of instrumental and expressive ties on knowledge sharing. Specifically, it was found that the relationship between instrumental ties and knowledge sharing was stronger for females, while that between expressive ties and knowledge sharing was stronger for males. Similarly, Taylor (2004) found that the use of knowledge management systems was significantly influenced by gender, with males consistently reporting higher levels of usage of the email, data mining, knowledge repository and yellow page components of the knowledge management system they investigated. The finding by Boardia *et al.* (2006) that females have higher perceptions of the benefits of knowledge sharing than their male counterparts also suggests that gender may influence knowledge sharing behaviour.

Tenure also appears to have some effect on knowledge sharing. Bakker *et al.* (2006) reported a positive correlation $(0.19; p < 0.05)$ between team tenure and knowledge sharing, indicating that "the longer team members have been together, the more likely they are to share knowledge between them" (p.602). Boardia *et al.* (2006) found organizational tenure to be a good predictor of knowledge sharing when knowledge is shared interpersonally, though not so when sharing occurs through databases. Additionally, they reported negative correlations between tenure and evaluation apprehension whether knowledge was shared interpersonally or through databases.

Personality, too, may affect knowledge sharing. The study by Taylor (2004) found that cognitive style significantly influenced the use of knowledge management systems. Cognitive style "refers to the consistent individual differences in the way people process information to make decisions", and "is concerned with how people think, solve problems, relate to others, and learn" (Taylor, 2004, p.53). Intuitives [right-brained; heuristics] "make immediate judgments based on feeling or intuition", while analytics [left-brained; systematics] prefer "judgment based on reasoning, analysis, and a focus on detail" (Taylor, 2004, p.53). Analytics reported higher levels of usage for the data mining, knowledge repository, and Lotus note components of the knowledge management studied, while 'intuitives' reported marginally higher usages for the e-mail and yellow pages components.

2.4   Nature of knowledge

Ipe (2003) asserts that both the nature of knowledge — whether it is tacit or explicit — as well as its value will have an important influence on knowledge sharing. Drawing from von Hippel (1994, p.430), who defined stickiness as "the incremental expenditure involved in moving knowledge in a form that is useable and easily understood by the information seeker", Ipe argues that since tacit knowledge is by definition not easily codifiable, it is difficult to share. Stickiness, however, is also a function of the absorptive capacity of the intended recipient. Explicit knowledge can be easily articulated and — at least potentially — transferred and shared.

Nevertheless, even when 'articulated', explicit knowledge may still not be available to other members of the organization. Weiss (1999), cited in Ipe (2003, p.344), distinguished between explicit, rationalised knowledge and explicit, embedded knowledge, and argued that of the two, explicit embedded knowledge is not easily shared: rationalised knowledge, such as methodologies for undertaking consultancies, is "general, context independent, standardized, and public", while embedded knowledge is "context dependent, narrowly applicable, personalized, and maybe personally or professionally sensitive". In other words, the fact that explicit knowledge is easily articulated does not necessarily mean that it will be easily appropriated by the recipient.

According to Ipe (2003), when knowledge is perceived to be valuable, particularly at the individual (as opposed to organizational) level, it influences decisions about what knowledge to share, when to share, and who to share it with. Additionally, in cases where the value of an employee to an organization is largely a function of how knowledgeable the employee is (e.g. professionals in the consulting businesses), and also in times of mergers and acquisitions accompanied by high levels of anxiety, employees are likely to be reluctant to share knowledge.

Kwok & Gao (2006) investigated the role of absorptive capacity and channel richness in knowledge sharing. They hypothesised that absorptive capacity would positively influence an individual's attitudes towards knowledge sharing, as would channel richness; both hypotheses were supported. Absorptive capacity refers to "an individual's ability to recognize new knowledge, assimilate it, and then utilize it to solve problems" (Kwok & Gao, 2006, p.49). The channel that connects individuals sharing knowledge may include physical settings such as telephones, discussion rooms or computer networks, as well as "virtual connection between employees and even a knowledge sharing friendly culture in an organization" (Kwok & Gao, 2006, p.46-47). The communication channel could be informal (e.g. coffee break conversations), or formal (e.g. formal training sessions). According to Kwok & Gao (2006, p.49), it is not difficult to understand why absorptive capacity and channel richness should positively influence attitude to knowledge sharing:

> "If the recipient equipped with large absorptive capacity can learn and use the knowledge shared by the contributor, both sides then could experience the effectiveness of knowledge sharing and the feeling of competency. [Similarly for channel richness] ... people would hold favorable attitude[s] toward knowledge sharing behaviors if they feel convenient and flexible in time and place to engage in such activities".

The nature of knowledge may also influence knowledge sharing by dictating the channels used, and, in the process, interacting with evaluation apprehension. For instance, the study by Boardia et al. (2006), reviewed later in this chapter, found that evaluation apprehension was more of a knowledge sharing barrier

when knowledge was shared via knowledge management systems than interpersonally, suggesting an indirect relationship between the nature of knowledge and evaluation apprehension.

2.5 Motivation to share

Ipe (2003) divides factors that motivate individuals to share knowledge into internal and external factors. Internal factors include perceived power emanating from knowledge, and reprocity consequent to sharing one's knowledge with others. Since knowledge is perceived to be important to organizations, it follows then that knowledgeable employees are valuable to organizations, which in turn builds power around knowledge; to share knowledge may thus be perceived as ceding power to potential competitors! In such situations, knowledge hoarding, rather than knowledge sharing, becomes the norm.

Reprocity influences knowledge sharing behaviour; individuals are more likely to share knowledge if they will potentially get something in return. As Ipe (2003, p.346) puts it, "reprocity as a motivator of knowledge sharing implies that individuals must be able to anticipate that knowledge sharing will prove worthwhile, even if they are uncertain about exactly what the outcome will be. It is the expectation that those involved in sharing knowledge will be able to acquire or benefit from some of the value created by their involvement".

Under external motivational influences, Ipe (2003) cites the relationship of the knowledge source with the recipient, and rewards for sharing. Ipe sees trust and the power and status of the recipient as defining the relationship between the two individuals sharing knowledge. Trust determines what knowledge a given individual will share with whom. With respect to the latter, Huber (1982), noted that lower ranking individuals direct information to higher ranking individuals, while high ranking individuals direct it to their peers. Rewards, too, are considered a motivational influence that encourages knowledge sharing; as Ipe (2003, p.348) puts it: "real and perceived rewards and penalties for individuals that come from sharing and not sharing knowledge also influence the knowledge-sharing process". Thus, rewards encourage knowledge sharing, while sanctions and penalties discourage knowledge hoarding.

A substantial number of studies have investigated what motivates individuals to engage — or shun engaging — in knowledge sharing in organizations. Broadly, we have grouped the factors into: organizational rewards; image, outcome expectations, and employee aspirations; self-efficacy; fear and apprehension; attitudinal variables; altruism and enjoyment helping others; and trust.

2.5.1   Organizational rewards

Rewards can be an important catalyst for knowledge sharing in organizations. Müller *et al.* (2005) found a significant positive effect of incentives on knowledge sharing behaviour. Similarly, Wah *et al.* (2005) found empirical support for their hypothesis that rewards and recognition would be positively related to knowledge sharing. Boardia *et al.* (2006) found that perceived benefit of knowledge sharing positively correlated with knowledge sharing in the database context though not in the interpersonal context, possibly because in the database context rewards tend to be more explicit and formalised.

Some studies have, however, cast aspersions on the role of extrinsic motivation in knowledge sharing. Kwok & Gao (2006) found some support for their hypothesis that extrinsic motivation does not positively influence an individual's attitude toward knowledge sharing behaviour. In Bock *et al.* (2005)'s 2005 study, anticipated rewards negatively correlated with the attitude towards knowledge sharing, prompting the researchers to caution that "extrinsic rewards [may] hinder rather than facilitate the formation of positive attitudes to knowledge sharing" (p.98). In an earlier study, Bock & Kim (2002) also did not find any empirical support for the hypothesis that anticipated rewards would positively correlate with attitude towards knowledge sharing, and argued that "incentives do not seem to alter the attitude that underlies our knowledge sharing behavior. They do not create an enduring commitment to any action. Rather, incentives merely — and temporarily — change what we do" (p.19).

Further casting doubts on the importance of rewards in knowledge sharing, the study by Kankanhalli *et al.* (2005) failed to detect any support for their hypotheses that under conditions of weak pro-sharing norms or weak identification, organizational rewards would positively correlate with knowledge contribution

to an electronic knowledge repository. In the recent study by Lin (2007b), too, organizational rewards did not significantly influence knowledge sharing. Nevertheless, while Cabrera *et al.* (2006) found that rewards only had a moderate effect on knowledge sharing, they suggested that "the effect of rewards [may also be] indirect, since rewards may help set up a supportive environment with respect to knowledge sharing" (p.260).

2.5.2 Image, outcome expectations, and employee aspirations

Image, outcome expectations, and employee aspirations all appear to be important antecedents of knowledge sharing behaviour. In the study by Wasko & Faraj (2005) perceptions of enhanced reputation correlated positively with the helpfulness of contributions made to an electronic knowledge repository, as well as the volume of the contributions made.

Chiu *et al.* (2006) investigated the role of community-related and personal outcome expectations in knowledge sharing in a virtual community. They defined community-related outcome expectations as "a knowledge contributor's judgment of likely consequences that his or her knowledge sharing behavior will produce to a virtual community" [e.g. enriching community knowledge, helping the community grow], while personal outcome expectations were defined as "the knowledge contributor's judgment of likely consequences that his or her knowledge sharing behavior will produce to him or herself" [e.g. being seen as skilled, gaining respect, making friends, sense of accomplishment] (p.1876). Community-related outcome expectations strongly and positively influenced both the quantity of knowledge sharing, and the quality of the knowledge shared, while personal outcome expectations did not significantly affect any of the knowledge sharing dimensions. However, in the later study by Hsu *et al.* (2007) personal outcome expectations predicted knowledge sharing behaviour but community-related outcome expectations did not have any significant influence on knowledge sharing behaviour. Although the disagreements between Chiu *et al.* and Hsu *et al.* are not easy to explain — and would benefit from more empirical research — taken together, the

two studies seem to suggest that outcome expectations and employee aspirations are important for knowledge sharing.

2.5.3 Self-efficacy

Self-efficacy is "judgment of one's ability to accomplish a certain level of performance" (Bandura, 1986, p.391). According to Cabrera *et al.* (2006, p.249), "an extensive line of research ... has demonstrated that a person's inclination to engage in a specific course of action ... is heavily influenced by the person's sense of self-efficacy". Not surprisingly, quite a substantial number of studies have looked at the role of knowledge self-efficacy in knowledge sharing.

Lin (2007b) reported strong correlations between knowledge self-efficacy and both knowledge donating $(0.45, p < 0.01)$ and collecting $(0.38, p < 0.01)$. In their study, Hsu *et al.* (2007, p.164) concluded that "self-efficacy is a significant predictor of knowledge sharing behaviour". Cabrera *et al.* (2006, p.259), whose study tested the influence of a number of variables on knowledge sharing, reported "a strong relationship between role-breadth self-efficacy and self-reports of knowledge management behaviour, even after controlling for every variable under study". De Vries *et al.* (2006) reported significant positive correlations between self-rated performance and both eagerness and willingness to share knowledge. The study by Kankanhalli *et al.* (2005) investigated the factors influencing contributions to electronic knowledge repositories; self-efficacy significantly positively correlated $(0.25; p < 0.001)$ with contribution.

Thus, in general, self-efficacy has been found to be an important antecedent of knowledge sharing behaviour. Indeed, "it seems that a sense of personal competence and confidence may be a requirement for a person to engage in knowledge exchanges" (Cabrera *et al.*, 2006, p.259). Conspicuously, though, in a study investigating the determinants of knowledge contribution to an electronic network of practice, Wasko & Faraj (2005) did not detect any significant relationship between self-rated expertise and either of the helpfulness or the volume of the contributions individuals made to the practice. Wasko & Faraj argue that this might be due to the way they measured self-rated expertise i.e. it was calculated

as an average of scores across a number of sub-specialties, rather than with respect to the specific message that the individual was responding to, opening the possibility that individuals scoring high on self-efficacy may in fact have been responding to messages on topics with which they were not necessarily familiar.

2.5.4 Fear and apprehension

Evaluation apprehension and fear associated with the loss of knowledge power have been shown to be important potential barriers to knowledge sharing. Boardia *et al.* (2006) found that evaluation apprehension was negatively correlated with knowledge sharing, particularly when such sharing was conducted through collective databases and other knowledge repositories; they suggested that the higher levels of evaluation apprehension in the database-centred knowledge sharing context may be due to the number and characteristics of people accessing the knowledge, as well as the permanency of the record. Unfortunately, anonymity, which may at first appear an attractive solution, also has negative consequences. Boardia *et al.* note that it may reduced the perceived benefits of sharing as no rewards can be accorded. Additionally, it may reduce the perceived usefulness of knowledge in the database as the level of expertise of the contributor cannot be determined.

Renzl (2008) found that fear of losing one's unique value negatively influenced knowledge sharing both within and between teams. Interestingly, Renzl also found that trust in management correlated with fear of losing one's unique value, suggesting that the impact of fear of loss of one's unique value on knowledge sharing may be mitigated by the creation of a context in which employees develop trust in management. Moreover, according to Wang (2004, p.380), " ... workers may reduce their knowledge sharing intentions when they feel threatened by competition from colleagues, causing self-interest to dominate [and] such a negative influence is particularly strong when the organization evaluates employees not on individual performance by comparing their performance with that of their colleagues" (p.380).

Notably, in the study by Kankanhalli *et al.* (2005) fear of loss of knowledge power was not found to be related to knowledge sharing via an electronic knowl-

edge repository. These researchers reported that even under conditions of weak pro-sharing norms, loss of knowledge power did not affect knowledge contribution to the electronic knowledge repository. Kankanhalli *et al.* suggest that this may have been due to the fact that for the organization considered in their study, individuals were free to decide what to contribute and what not to contribute; as such, there was no need for them to be afraid that their value to the organization would diminish as a result of them contributing knowledge to the electronic knowledge repository.

2.5.5 Attitudinal variables

A number of studies have investigated the influence of workplace attitudes, such as organizational commitment and job satisfaction, on knowledge sharing behaviour. Lin (2007a) reported that organizational commitment influenced knowledge sharing indirectly via distributive and procedural justice, as well as cooperativeness among employees. Cabrera *et al.* (2006) found value-based commitment, defined as "congruence between the values of the employee and the values of the organization" (p.248), to be a good predictor of knowledge sharing, though "the effect is washed out once other organizational variables are entered into the model" (p.260), which, Cabrera *et al.* note, was unexpected: these researchers suggested that perhaps organizational commitment influenced knowledge sharing by "improving people's perceptions about the organization, the support they receive from it, as well as the quality of the information they normally get from it" (p.260).

Van den Hooff & de Leeuw van Weenen (2004, p.20) differentiated between knowledge donating and knowledge collecting: knowledge donating refers to "communicating to others what one's personal intellectual capital is" while knowledge collecting is "consulting colleagues in order to get them to share their intellectual capital"(van den Hooff & de Ridder, 2004, p.118). In their study, they concluded that "(affective) commitment to one's department positively influences both knowledge donating and collecting, whereas commitment to the organization as a whole is positively related to knowledge collecting outside of the department". In the study by van den Hooff & de Ridder (2004, p.126), affective

organizational commitment was found to be a significant predictor of knowledge donating, but not knowledge collecting, where knowledge donating is defined as "communicating to others what one's personal intellectual capital is" while knowledge collecting is "consulting colleagues in order to get them to share their intellectual capital" (p.118).

While in general commitment appears to be an important antecedent of knowledge sharing behaviour, Wasko & Faraj (2005) surprisingly reported a significant negative association between commitment to an electronic network of practice and the helpfulness of contributions made by network members, and no relationship between commitment to the network and the volume of contributions made to the network. Wasko & Faraj suggested that this may be due to the fact that members of a virtual community — such as the one considered in their study — lack a shared history, are not highly interdependent, do not interact frequently, and also lack co-presence.

Job satisfaction appears to be an important antecedent of knowledge sharing behaviour. De Vries *et al.* (2006) reported positive correlations between job satisfaction and both of eagerness and willingness to share knowledge. In this study, willingness was defined as "the extent to which an individual is prepared to grant other group members access to his or her individual intellectual capital", while eagerness referred to "the extent to which an individual has a strong internal drive to communicate his or her individual intellectual capital to other group members" (p.117). According to de Vries *et al.*, while willingness implies conditionality — i.e. 'willing' individuals will not necessarily share their knowledge if they perceive other group members as being unwilling to reciprocate — eagerness implies a positive attitude towards knowledge sharing i.e. 'eager' individuals will share their knowledge whether or not other group members are willing to reciprocate.

Other antecedents of knowledge sharing behaviour that may be included under workplace attitudes are attitude towards knowledge sharing, intention to share knowledge, and ethical concerns. Bock *et al.* (2005), Ryu *et al.* (2003) and Bock & Kim (2002) reported positive correlations between attitude towards knowledge sharing and the behavioural intention to engage in knowledge sharing. So & Bolloju (2005) also found that attitude predicted both the intention to share and the intention to reuse knowledge. The intention to share knowledge appears

to be a strong predictor of knowledge sharing; the study by Bock & Kim (2002, p.18) found that "... an individual's actual knowledge sharing behaviour is highly correlated with the behavioural intention to share knowledge".

In the study by So & Bolloju (2005), perceived behavioural control positively affected both the intention to share knowledge, and the intention to reuse knowledge. Similarly, Ryu *et al.* (2003) reported a significant, direct effect of perceived behavioural control on behavioural intention to share knowledge. The 2004 study by Wang found that the belief by employees that knowledge sharing was a basic part of their job positively influenced individual intentions to share knowledge.

Collectively, the above studies indicate that attitudinal variables, such as organizational commitment, job satisfaction, and the intention to share knowledge, are important predictors of knowledge sharing behaviour. Indeed, the study reported in this thesis itself investigated the role of job satisfaction and organizational commitment in knowledge sharing.

2.5.6 Altruism and enjoyment helping others

People sometimes share knowledge for altruistic reasons. The studies by Lin (2007b), Kankanhalli *et al.* (2005), Wasko & Faraj (2005), and Wah *et al.* (2005) explored the role of 'enjoyment helping others' in knowledge sharing. Lin found that enjoyment helping others was significantly positively correlated to both knowledge donating ($0.31; p < 0.01$) and knowledge collecting ($0.27; p < 0.01$), while Kankanhalli *et al.* reported positive correlations ($0.43; p < 0.001$) between enjoyment helping others and knowledge contribution to an electronic knowledge repository. Surprisingly, Wasko & Faraj reported a *barely* significant relationship between enjoy helping others and the helpfulness of contributions to an electronic network of practice, while the relationship between enjoyment helping others and the volume of contributions was not significant at all. Similarly, in Wah *et al.*'s 2005 study, altruism was not an important factor in knowledge sharing, prompting the researchers to suggest that this may be due to the fact that their sample consisted of highly qualified people loyal to their professions, but not necessarily their organizations.

2.5.7 Trust

Trust , defined as "the willingness of a party to be vulnerable to the actions of another party, with the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party" (Liao, 2006, p.229), appears to be an important antecedent of knowledge sharing: Renzl (2008) detected significant negative correlations (i) between trust in management and losing one's unique value and (ii) between fear of losing one's unique value and knowledge sharing, and a significant positive correlation between trust in management and knowledge documentation; in the study by Hsu *et al.* (2007, p.160), identification-based trust, which "consists of emotional bonds between individuals", predicted knowledge sharing behaviour, and was also indirectly related to knowledge sharing behaviour through self-efficacy; Lin (2007a) found that trust significantly positively correlated with tacit knowledge sharing; Liao (2006) reported a significant positive correlation between trust and knowledge sharing; Wang *et al.* (2007) reported significant positive correlations $(0.46; p < 0.01, two-tails)$ between trust towards colleagues and willingness to share knowledge; Chowdhury (2005) found both affect-based trust $(r = 0.63; p < 0.01)$ and cognition-based trust $(r = 0.69; p < 0.01)$ to be significantly positively correlated with knowledge sharing.

Despite the various studies, both conceptual and empirical, that have suggested that trust is an important antecedent of knowledge sharing, Bakker *et al.* (2006) found that in the context of new product development teams, trust was a poor predictor of knowledge sharing, though they conceded that the absence of trust could very well impede knowledge sharing. These researchers argued that such teams tend to "inhabited by professionals, each an expert at his job; there is generally little reason to believe that one will not do his job or cannot be trusted with particular knowledge. In addition, the complex nature of many modern products demands that members of new product development teams work together and share knowledge — refraining from sharing knowledge will impede the performance of the team as a whole ... As a result we believe trust is highly overrated as a main driver of knowledge sharing" (p.598).

2.6 Opportunities to share

Even when individuals are motivated to share knowledge, lack of opportunities to do so may present a formidable obstacle. Ipe (2003) distinguishes between formal and informal knowledge sharing opportunities. Formal knowledge sharing opportunities, also called formal interactions and purposive learning channels, include training programs, structured work teams, and computer systems, such as electronic knowledge repositories and web portals, while informal opportunities refer to "personal relationships and social networks that facilitate learning and the sharing of knowledge" (Ipe, 2003, p.349). Ipe notes that while the former provides the context and tools to facilitate knowledge sharing, most knowledge sharing actually occurs via the latter, through face-to-face communication.

2.6.1 Information and communications technology

Research findings from studies investigating the relationship between information and communications technology and knowledge sharing have been mixed. In Lin (2007b), level of technology usage positively influenced knowledge collecting but was unrelated to knowledge donating. In Cabrera *et al.*'s 2006 study, the availability of key knowledge management systems and the quality of their contents both significantly positively correlated with knowledge sharing. Kim & Lee (2006) found that both the level of ICT application usage and the perceived ease of usefulness of IT systems were positively related to knowledge sharing. Van den Hooff & de Leeuw van Weenen (2004) reported significant positive correlations between the use of computer-mediated communication and knowledge collection, though not with knowledge donation. In van den Hooff & de Ridder (2004), the use of computer-mediated communication influenced knowledge donation through organizational commitment.

Some studies, however, have not found ICT to be a particularly important antecedent of knowledge sharing. Bock & Kim (2002), for instance, did not detect any relationship between the level of ICT usage and knowledge sharing behaviour. In Boardia *et al.*'s 2006 study, knowledge sharing intentions were higher in the

interpersonal context than in the database context, ostensibly because interpersonal knowledge sharing provides additional opportunities for additional interpretation and clarification. Even in the Cabrera *et al.* (2006) study alluded to above, of various psychological, organizational, and system-related variables studied, systems-related variables (perceived availability and quality) were reported to be the least relevant factors in predicting knowledge sharing.

2.6.2   Social relationships and norms

Lin (2007a) found both instrumental ties — which "arise in the performance of work and facilitate the transfer of physical, informational, or financial resources to their team members" (p.417), and expressive ties — "standing for offering friendship and social support" (p.417) both positively correlated with trust in co-workers, which in turn positively influenced tacit knowledge sharing. In the study by Chiu *et al.* (2006) social interaction ties, identification, and community related outcome expectations were found to be significant antecedents of knowledge sharing. Wasko & Faraj (2005), too, reported that an individual's network centrality positively correlated with the helpfulness of their contributions and the volume of their contributions. The earlier study by Bock & Kim (2002) had also reported that 'expected associations' positively correlated with the attitude towards knowledge sharing, thereby influencing the intention to share knowledge, in turn influencing actual knowledge sharing behaviour.

Bock *et al.* (2005) reported that anticipated reciprocal relationships were positively related to a favourable attitude towards knowledge sharing. They also reported a positive influence of subjective norm on the intention to share knowledge, and also on the attitude towards knowledge sharing. So & Bolloju (2005) found that while subjective norm was positively related to the intention to reuse knowledge, it did not appear to be related the intention to share knowledge. Ryu *et al.* (2003) found subjective norm to be strongly positively related to behavioural intention to share knowledge. More recently, Chiu *et al.* (2006) found that the norm of reprocity significantly correlated with quantity of knowledge shared, though not the quality of such knowledge. Nevertheless, in the study by Wasko & Faraj (2005) expectations of reprocity were not related to helpfulness

of contributions, and negatively correlated with volume of contributions. A possible explanations advanced by Wasko & Faraj was the generalized, rather than dyadic, nature of network-based interactions: individuals give even when the recipient does not reciprocate because the giver is likely to benefit indirectly when a third party makes a contribution i.e. reprocity is generalized.

2.7 The culture of the work environment

Organizational culture is frequently cited as an important factor in knowledge management in general, and knowledge sharing in particular; for instance, in Botha & Fouché's 2002 knowledge management reference model, organizational culture is identified as an important aspect of the context within which knowledge processing activities occur. Schein (Schein 1985, Schein 1992), cited in Jex (2002), identified three dimensions of organizational culture: artefacts, which are "aspects of the physical environment that are meant to communicate cultural meaning", technology, which "represents the means by which organizations transform input from the outside environment", and behaviour patterns, representing "what employees do in the organization" (Jex, 2002, p.402). Similarly, Ostroff *et al.* (2003), cited in Muchinsky (2006), identified three levels of organizational culture: (i) observable artefacts, such as symbols, language, narratives, and practices; (ii) espoused values, specifically endorsed by the organization's leadership, and (iii) basic assumptions, which are so deeply ingrained as to be taken for granted yet are at the core of the organization.

Ipe (2003) makes some interesting observations about how culture affects knowledge sharing. Culture shapes individuals' assumptions about the value of knowledge — such as which knowledge is valuable. Culture also provides the context for social interaction, and thus underlies the organizational norms, such as reprocity and knowledge ownership, guiding the distribution of knowledge within the organization. The corporate vision — itself an aspect of organizational culture — is also an important determinant of organizational values, such as trust and openness, which in turn influence knowledge sharing behaviour.

2.7.1 National and organizational culture

Müller *et al.* (2005) explored the relationships between various dimensions of culture and knowledge sharing behaviour. Individualism, "the degree to which individuals integrate into groups" (Müller *et al.*, 2005, p.6) significantly negatively correlated with knowledge sharing $(-0.33; p < 0.005)$; power distance, "the extent to which less powerful members of organizations and institutions expect and accept that power is distributed unequally" (Hofstede 1994, cited in Müller *et al.* 2005, p.6) correlated strongly with knowledge sharing, also in the positive direction $(0.56; p < 0.01)$; uncertainty avoidance, "the extent to which members of a culture feel threatened by uncertain or unknown situations" (Hofstede 1994, cited in Müller *et al.* 2005, p.6), weakly, and non-significantly, negatively correlated with knowledge sharing (-0.18). Müller *et al.*'s study, therefore, underscored the importance of national culture to organizational knowledge sharing.

Organizational culture has generally been found to be an important factor in knowledge sharing. The recent study by Yang (2007b) concluded that a collaborative culture was strongly positively correlated with the effectiveness of knowledge sharing. Liao (2006) reported significant positive correlations between certain aspects of learning organizations, and knowledge sharing: open-mindedness, shared vision, and trust all directly and positively influenced knowledge sharing. In the study by Kim & Lee (2006), knowledge sharing correlated significantly with aspects of organizational culture, namely, vision and goals $(0.47; p < 0.05)$, trust among employees $(0.37; p < 0.05)$, and social networks $(0.57; p < 0.05)$ as well as with the centralisation aspect of organizational structure $(-0.34; p < 0.05)$. Chiu *et al.* (2006) found that a shared language and vision positively correlated with the quality — though not the quantity — of shared knowledge. Ruppel & Harrington (2001) concluded that implementation of intranets, often used to facilitate knowledge sharing, benefited greatly from a culture that emphasises trust and concern for other people, and flexibility and innovation.

Bock *et al.* (2005) investigated the role of organizational climate in knowledge sharing; they concluded that "an organizational climate conducive to knowledge sharing (operationalised here as fairness, innovativeness, and affiliation) exerts a strong influence on the formation of subjective norms regarding knowledge

sharing; it also directly affects (although less strongly) individual's intentions to engage in knowledge sharing behaviours" (p.99).

2.7.2   Leadership and supervisory control

Srivastava *et al.* (2006) reported significant positive correlations between empowering leadership and knowledge sharing ($0.41; p < 0.01$). In their 2006 study, Chen & Barnes detected significant positive correlations between various dimensions of both transformational and transactional leadership behaviours, and knowledge sharing. In King & Marks, Jr (2008), supervisory control — "efforts by management to increase the likelihood that individuals will act in ways that will result in the achievement of organizational objectives" (p.132) — significantly positively correlated with both contribution frequency and effort to contribute efficacious knowledge. Similarly, Lin (2007b) reported significant positive correlations between top management support and knowledge sharing, both donating and collecting.

Quinn & McGrath (1985), cited in Yang (2007b), classified leadership roles into eight types: monitor, coordinator, director, produce, innovator, broker, facilitator, and mentor roles. According to Yang (2007b, p.533), "managers as mentors assist subordinates to develop job-related competencies with empathy and consideration"; "innovators investigate the external environment and absorb collected information and knowledge as rapidly as possible"; "facilitators emphasize group harmony and consensus, and invigorate interpersonal relationships to minimize conflicts and involve employee participation in problem-solving and enlarging organizational resources"; "managers as monitors govern subordinates in accordance with company rules and individual reviews". Yang (2007b) found that mentor, innovator and facilitator leadership roles significantly positively correlated with knowledge sharing, while the monitor role negatively correlated with knowledge sharing - suggesting that " ... 'command and control' organizations would impede the development of [knowledge management] practices" (p.537). According to Chen & Barnes (2006, p.58), "leaders who communicate a strong vision and create buy-in through jointly envisioning a positive future are likely to improve knowledge sharing as will those who communicate clear expectations and

create an awareness of organizational problems. In addition, leaders who promote careful problem solving and provide personal attention to employees will also be more likely to improve knowledge sharing".

2.7.3 Communication climate

Van den Hooff & de Ridder (2004) argued that knowledge sharing is a form of communication and that organizational communication climate should be expected to influence knowledge sharing. Drawing from Putnam & Cheney (1985), they defined communication climate as "the atmosphere in an organization regarding accepted communication behaviour", and identified the following as its key components: horizontal information flow, openness, vertical information flow, and reliability of information. In their study of knowledge sharing in Dutch organizations, van den Hooff & de Ridder (2004) detected significant positive correlations between communication climate and both knowledge donating and collecting, and concluded that "communication climate was ... a crucial variable in explaining knowledge sharing" (p.126).

De Vries *et al.* (2006) looked at the role of team communication styles on knowledge sharing. They hypothesised that "teams that communicate in an agreeable manner are more likely to create willingness on the part of the communication partner to share knowledge" (p.199); the study provided empirical support for the hypothesis.

Despite the various studies that have found communication to be an important factor in knowledge sharing, Liao (2006) reported dissenting findings. Her study involved employees working in various manufacturing companies in the Taiwanese computer industry. Subjecting the data to structural equation modelling, she found that though communication was an important factor in firm innovation, it was not significantly related to knowledge sharing. According to Liao, this may have been indicative of the fact that in the sample that she considered, "interaction and communication with individuals and business unit may [have been] just general talk, not sharing their experience or knowledge ..." (p.234).

2.7.4 Organizational justice

Lin (2007a) investigated the role of organizational justice in knowledge sharing. Two dimensions of organizational justice were considered, namely, distributive justice — "the fairness with which the outcomes or results are distributed among members of an organization" (Muchinsky, 2006, p.322) — and procedural justice "the fairness by which means are used to achieve results in an organization" (Muchinsky, 2006, p.323). The study concluded that tacit knowledge sharing was affected by both distributive and procedural justice indirectly via organizational commitment, and by distributive justice indirectly via trust in co-workers.

2.8 Relationships among factors

Ipe (2003) makes the important point that while the nature of knowledge, the motivation to share, the opportunities to share, and the culture of the work environment all influence knowledge sharing behaviour in organizations, they do not do so in isolation but in interaction with one another. Ipe further points out that the various factors do not necessarily influence knowledge sharing equally, and that the relative importance of each factor will depend on the organizational context. While this aspect of Ipe's framework does not come out clearly from Figure 2.1 (see page 20) — and perhaps cannot, given the two dimensional nature of the diagram — it has nevertheless been empirically supported by a number of studies.

Quigley et al. (2007) concluded that "incentives alone proved to have a rather weak influence on knowledge sharing, but those effects were strengthened when mutual norms for knowledge sharing developed between the knowledge sender and recipient" (p.82). Similarly, Renzl (2008, p.206) concluded that "trust in management increases knowledge sharing through reducing fear of losing one's unique knowledge and improving willingness to document knowledge". Kankanhalli et al. (2005) tested the impact of generalised trust on the relationship between codification effort and knowledge sharing; they concluded that "when generalized trust is strong, codification effort may not be a deterrent for [electronic network repository] usage by knowledge contributors".

Other determinants of individual engagement in knowledge sharing have also been found to interact. Wah *et al.* (2005, p.7) found that " ... individuals who are highly competent in their work abilities are less likely to share what they know when they perceive there are few rewards or when sharing is not recognized by the organization. Individuals who are low on competency, relative to colleagues, tend to share their knowledge regardless of whether there are organizational incentives to do so". Bock *et al.* (2005) found that attitude towards knowledge sharing to be contingent upon anticipated extrinsic rewards, anticipated reciprocal relationships, and a sense of self-worth.

2.9   Conclusions

This chapter reviewed the quantitative empirical literature on knowledge sharing using Ipe's 2003 knowledge sharing conceptual frame to structure the discussion. According to Ipe, knowledge sharing behaviour in organizations is influenced by the individual's motivation to share knowledge, nature of knowledge, the availability of opportunities to share knowledge, and the culture of the organization. In general, the studies reviewed in this chapter support the utility of Ipe's framework: each of the determinants of knowledge sharing identified in the framework has been found to be important to knowledge sharing. Ipe also argued that as well as individuals influencing knowledge sharing behaviour, the factors identified in her framework interact to collectively influence knowledge sharing; this too, was supported by a number of the studies reviewed. Indeed, van den Hooff & de Leeuw van Weenen (2004) even found that dimensions of knowledge sharing behaviour were related, with knowledge collecting influencing knowledge donating.

Organizational culture, though, deserves special mention. Organizational culture is often defined pragmatically as "the way we do things around here", highlighting the extent to which culture permeates organizational existence. Variables such as technology, including knowledge management systems, and organizational rewards, leadership, and justice may also be seen as aspects of organizational culture. Rewards too, classified under 'motivation to share', may also be seen

as aspects of organizational culture. Thus, there is some inescapable but non-debilitating arbitrariness in Ipe's 2003 framework.

Conspicuously, in the literature, not much attention has been paid to the antecedents of knowledge sharing behaviour in school environments. Furthermore, while many of the studies reviewed here have used concepts from the discipline of Organizational Behaviour, few have explicitly framed knowledge sharing behaviour within the context of this discipline; indeed, Ipe's framework itself is not explicit about this. In Hansen & Avital's 2005 definition of knowledge sharing cited earlier in this chapter, knowledge sharing is defined as "behaviour" that individuals engage in within organizations. Similarly, Kelloway & Barling (2000) motivate for knowledge work, subsuming knowledge sharing, to be considered organizational behaviour.

The current study casts knowledge sharing behaviour as a type of organizational citizenship behaviour. Consequently, the next chapter considers organizational citizenship behaviour and two of its major antecedents, namely, job satisfaction and organizational commitment.

Chapter 3

Organizational citizenship behaviour and its antecedents

3.1 Introduction

As conceptualised in this study, knowledge sharing is a type of behaviour that individuals engage in within organizations. Furthermore, the study also posits that knowledge sharing behaviour is in fact a type of organizational citizenship behaviour. As such, the study investigates whether — as would be expected if knowledge sharing behaviour was a type of organizational citizenship behaviour — the two are correlated as well as whether the predictors of one also predict the other. The organizational citizenship behaviour literature indicates that the two workplace attitudes, job satisfaction and organizational commitment, consistently strongly predict organizational citizenship behaviour. This chapter, then, reviews the empirical literature on organizational citizenship behaviour, job satisfaction, and organizational commitment.

Issues pertaining to research design in general and respondent selection in particular are discussed at length in Chapter 4. Nevertheless, because of its influence on the structure of the current chapter, the following point must be kept in mind while reading this chapter: although this study is interested in the relationships among knowledge sharing behaviour, organizational citizenship behaviour, job satisfaction, and organizational commitment in workplaces in general, the sample actually analysed consists of teachers in selected senior secondary schools

in Botswana. Consequently, while the review presented here looks at organizational citizenship behaviour and its antecedents generally, appropriate sections are devoted to the situation as it obtains in school environments.

The chapter itself is structured as follows: section 3.2 is devoted to organizational citizenship behaviour, looking at its definition, dimensions, and correlates. Similarly, sections 3.3 and 3.4 are devoted to job satisfaction and organizational commitment, respectively. Section 3.5 summarizes the material covered in this chapter, and also makes some conclusions, specifically highlighting the particular gap in the literature that the current study seeks to fill.

3.2 Organizational citizenship behaviour

Konovsky & Pugh (1994) trace the roots of organizational citizenship behaviour to the work of Katz who — writing in the 1960s — argued that there were three types of employee behaviours that were important for organizational success. Firstly, individuals enter and remain with the organization; secondly, they undertake well defined roles and functions within the organization; and, finally, they engage in "innovative and spontaneous activity that goes beyond role prescriptions" (Konovsky & Pugh, 1994, p.658). According to Konovsky & Pugh, it was Katz's contention that behaviour that goes beyond role prescriptions, though not formally required of employees, is essential for organizational success.

Formally, organizational citizenship behaviour may be defined as "individual behaviour that is discretionary, not directly related or explicitly recognized by the formal reward system, and in the aggregate promotes the efficient and effective functioning of the organization" (Organ et al., 2006, p.3). As Konovsky & Pugh (1994, p.658) observe, it is "employee behavior that is above and beyond the call of duty and is therefore discretionary and not rewarded in the context of an organization's formal reward structure". Thus, the fundamental distinction between organizational citizenship behaviour and in-role behaviour is that while the latter is formally required and expected of the employee as part of their duties and responsibilities, the former is voluntary and goes beyond normal role expectations (Allison et al., 2001).

Different types of organizational citizenship behaviours have been identified, with the review by Podsakoff *et al.* (2000) cataloging some thirty or so discussed in the literature. Smith *et al.* (1983) distinguished between 'altruism' and '(generalised) compliance'; while altruism denotes behaviour whose immediate beneficiary is a person, be it a colleague, supervisor, subordinate, or customer, compliance refers to behaviour that benefits the group, department, or organization (Organ *et al.*, 2006). Organ *et al.* caution that compliance should not be construed as "[implying merely strict obedience to an order"; rather, it denotes "the more general adherence to the spirit as well as the letter of the rules and norms that define a cooperative system" (p.19). Organ (1990), cited in Allison *et al.* (2001), identified five dimensions of organizational citizenship behaviour, namely, altruism, civic virtue, conscientiousness, courtesy, and sportsmanship; more details of these dimensions of organizational citizenship behaviour can be found in Table 3.1 on the following page .

Van Dyne *et al.* (1994) identified three dimensions of organizational citizenship behaviour, namely, (i) organizational obedience, which measures the extent to which employees comply with organizational rules, (ii) organizational loyalty, concerned with employee allegiance to the organization, and (iii) organizational participation measuring employee participation in organizational affairs.

Despite the large number of different categories of organizational citizenship behaviour alluded to in the literature, Pierce *et al.* (2002, p.279) list a handful of features common to organizational citizenship behaviours, namely that they are (i) voluntary on the part of the employee, (ii) intentional i.e. the employee consciously decides to perform them, (iii) intended to be positively valued by the employee and the organization, and (iv) primarily benefits the organization (or co-workers) and not the employee themselves. Moreover, Pierce *et al.* are also careful to distinguish between organizational citizenship behaviour and excellent job performance: "Employees can perform their jobs at a high level (sell a lot of products) without exhibiting [organizational citizenship behaviours] (refusing to stay late to help a customer). Employees demonstrate [organizational citizenship behaviours] when they act to benefit the employer in ways not expected of them" (p.279).

DIMENSION	DESCRIPTION	BUSINESS SETTING EXAMPLES
Altruism	Voluntary actions that help a fellow employee in work-related problems.	Help fellow employees understand a computer software program, or locate information.
Civic virtue	Voluntary participation in, and support of organizational functions of both a professional and social nature	Attend optional meetings, forums, training sessions; monitor firm threats and opportunities; attend company-sponsored social events (e.g. company picnics)
Conscientiousness	A pattern of going well beyond minimally required role and task requirements	Arrive at work early and leave late; avoid prolonged or unnecessary breaks; be punctual for meetings and appointments
Courtesy	The discretionary enactment of thoughtful and considerate behaviors that prevent work-related problems for others	Notify employer if one is going to be late or absent from work; notify co-workers in advance of committing to actions that will affect them
Sportsmanship	A willingness to tolerate the inevitable inconveniences and impositions that result in an organization without complaining, and doing so with a positive attitude	Refrain from complaining about having to work overtime to complete a project, having a deadline moved up, annoying but not harmful work conditions (e.g. uncomfortable temperature), or having one's ideas and suggestions rejected

Table 3.1: Dimensions of organizational citizenship behaviour [Source: Allison *et al.* (2001, 283)]

3.2.1 Consequences of organizational citizenship behaviour

Although some scholars (Hunt, 2002) do acknowledge that in certain types of jobs (e.g. so-called 'Taylorist' jobs) it may be necessary to discourage organizational citizenship behaviours, in general, organizational citizenship behaviours are assumed to be good for the organization. Researchers have investigated the consequences of organizational citizenship behaviour at two levels, namely, individual level and group level (where a group may be a single unit or the whole organization).

3.2.1.1 Individual consequences of organizational citizenship behaviour

Employees perceived to be engaging in organizational citizenship behaviours tend to be assessed favourably by their supervisors. In their 1999 study, MacKenzie et al. concluded that organizational citizenship behaviours influence managers' evaluations of employees to the same extent as do objective measures of performance. Other studies that have reached similar conclusions include MacKenzie et al. (1993), Allen & Rush (1998), and Moideenkutty et al. (2005). Thus, organizational citizenship behaviours may also influence the allocation of rewards — such as salary adjustments and promotions — to employees.

Organ et al. (2006) cite a number of possible reasons why engagement in citizenship behaviour might positively influence performance evaluations: (i) managers who are of the opinion that citizenship behaviours are good for the organization will likely evaluate employees who engage in such behaviours favourably; (ii) some manages intuitively believe that organizational citizenship behaviours are in fact part of the job employees are contracted to undertake; (iii) some managers see engagement in citizenship behaviour as an indication of organizational commitment; (iv) in line with norms of reciprocity and fairness, managers may reciprocate employee engagement in citizenship behaviours by giving such employees higher evaluations — and rewards — than employees who do not engage in citizenship behaviours.

Bolino (1999) developed the argument that while employees engaging in citizenship behaviours may be 'good soldiers' acting selflessly on behalf of the organization, such behaviours may also be self-serving and motivated by consider-

ations of impression management. Indeed, the study by Posdakoff & MacKenzie (1994) reported positive correlations between each of the helping, civic virtue, and sportsmanship dimensions of citizenship behaviours, and managers' overall evaluation of employees. Furthermore, Hui *et al.* (2000), cited in Muchinsky (2006), found that employees who expressed the belief that engaging in organizational citizenship behaviours enhanced promotion chances reported a decline in such behaviours once the employees were promoted.

With respect to the link between organizational citizenship behaviours and job performance, conflicting findings have been reported. In the study by MacKenzie *et al.* (1993) no relationship was detected between organizational citizenship behaviour and job performance. In contrast, Turnipseed & Rassuli (2005) found that "managers scored 'best' performing workers significantly higher than 'worst' performers" (p.239) on each of the dimensions of citizenship behaviour they considered.

3.2.1.2   Organizational performance and effectiveness

Podsakoff & MacKenzie (1997) point out that the huge interest among researchers and practitioners on organizational citizenship behaviours derives from the assumption that citizenship behaviour will enhance organizational performance. Indeed, the citizenship behaviour–organizational performance relationship is inherent in the definition of organizational citizenship behaviour. Furthermore, these authors advanced a number of reasons why citizenship behaviours may be expected to influence work group and organizational performance: enhancing co-worker productivity;enhancing managerial productivity; freeing up resources for more productive purposes; reducing the need to devote scarce resources to purely maintenance functions; serving as an effective means of coordinating activities between team members and cross work groups; enhancing the organization's ability to attract and retain the best people by making it a more attractive place to work; enhancing the stability of organizational performance; and enhancing an organization's ability to adapt to environmental changes (Podsakoff & MacKenzie, 1997, p.136–137).

Podsakoff & MacKenzie (1997) reviewed the literature on the organizational citizenship behaviour–organizational performance link and concluded that "taken together, the overall pattern of results provide general support for the hypothesis that [organizational citizenship behaviours] are related to organizational effectiveness" (p.142). In a study investigating the influence of organizational citizenship behaviour on the quantity and quality of workgroup performance, Podsakoff, Ahearne & MacKenzie (1997) reported positive associations between helping behavior and sportsmanship on performance quantity, as well as between helping behavior and performance quality. Studying retail sales personnel in Mexico, O'Connel *et al.* (2001) also reported a significant positive correlation ($r = 0.27, p < 0.01$) between customer service and organizational citizenship behaviours. A recent study by Bienstock *et al.* (2003) also found that organizational citizenship behaviours were positively related to both effective service delivery and customer perceptions of service quality.

Koys (2001) undertook a longitudinal study in which he sought to determine the direction of causation in the relationship between positive employee attitudes and behaviours on the one hand and business outcomes on the other. Using cross-lagged regression analysis, Koys found that employee attitudes and behaviours (including organizational citizenship behaviours) at one point in time predicted organizational effectiveness (profitability and customer satisfaction) at a later time. Organizational effectiveness at an earlier point in time, however, did not show any relationship with employee attitudes and behaviours at a later time. Thus, this study demonstrated that the direction of causation was from employee attitudes and behaviour to organizational effectiveness, and not the other way round.

3.2.2 Antecedents of organizational citizenship behaviour

3.2.2.1 Demographic variables

The relationship between organizational citizenship behaviour and demographic variables appears equivocal. The meta-analysis by Organ & Ryan (1995) did not detect any relationship between either gender or organizational tenure, and

organizational citizenship behaviour. Alotaibi's 2001 study of organizational citizenship behaviour among public sector employees in Kuwait found that only organizational tenure — and not nationality, sex, or age — correlated significantly with organizational citizenship behaviour. However, Garg & Rastogi (2006) reported higher levels of organizational citizenship behaviours among female teachers compared to their male counterparts; additionally, older teachers (36 years and over) exhibited more organizational citizenship behaviours than younger teachers. Thus, despite the apparent contradictions in the literature, one is inclined to believe that demographic variables do influence organizational citizenship behaviour.

3.2.2.2 Dispositions and attitudes

Organ & Ryan's 1995 meta-analytic review, which assessed 55 studies investigating the relationship between dispositions, job attitudes and organizational citizenship behaviours, only reported weak relationships between dimensions of the so-called Big Five Personality Traits (namely, neuroticism, extroversion, agreeableness, conscientiousness, and openness to experience) and organizational citizenship behaviours. However, Penner *et al.* (1997) argued that since organizational citizenship behaviour is prosocial, it would correlate positively with the personality trait 'prosocial personality orientation'. In their study involving Mexican salespeople, the Conscientiousness personality trait correlated significantly with organizational citizenship behaviour ($r = 0.35; p < 0.01$), as did also negative affectivity ($r = -0.24; p < 0.01$). Tang & Ibrahim (1998) also detected some positive relationships between the dispositional variables organization-based self esteem, need for achievement and self-esteem and organizational citizenship behaviours, while O'Connel *et al.* (2001) reported a significant correlations between organizational citizenship behaviour and conscientiousness ($r = 0.35, p < 0.01$) and negative affectivity ($r = -0.24, p < 0.01$).

According to Penner *et al.* (1997, p.112), "there is little question that the affective and cognitive components of job attitudes are causally related to [organizational citizenship behaviours]". Organ & Ryan (1995, p.791) concluded that

"evidence from the collective body of data supports a modest overall relationship between job satisfaction and various measures of organizational citizenship behaviour". The longitudinal study by Robinson & Morrison (1995) found that perceptions by employees that employers had failed to fulfill their side of the psychological contract negatively impacted upon the likelihood of employees engaging in organizational citizenship behaviours in the future. Job embeddedness, too, has been found to be a good predictor of organizational citizenship behaviours (Lee *et al.*, 2004). Tang & Ibrahim (1998) reported some association between job satisfaction and organizational citizenship behaviours. More recently, Chu *et al.* (2005) investigated the antecedents of organizational citizenship behaviours among hospital nurses in a Taiwan regional hospital, and found that job satisfaction and job involvement significantly influenced the nurse's organizational citizenship behaviours.

Thus, despite the somewhat mixed empirical results, individual dispositions and attitudes appear to exert a strong influence on organizational citizenship behaviour.

3.2.2.3 Organizational justice, leadership and work environments

Organizational justice — "the fair treatment of people in organizations" (Muchinsky, 2006, p.321) — has been found to be positively correlated with organizational citizenship behaviours (Bienstock *et al.*, 2003; Konovsky & Pugh, 1994). Studies in non-western societies, too, have demonstrated the importance of organizational justice and support to the development of organizational citizenship behaviour. Studying the antecedents of organizational citizenship behaviour among public sector employees in Kuwait, Alotaibi (2001) found that procedural and distributive justice collectively correlated with organizational citizenship behaviour; individually, procedural justice was a stronger predictor of citizenship behaviour than distributive justice. Ehigie & Otukoya (2005) investigated the antecedents of organizational citizenship behaviour in a Nigerian context. They found that perceived organizational support correlated with citizenship behaviour dimensions of helping behaviour, civic virtue, and sportsmanship, as well as with an

aggregate measure of citizenship behaviour combining all three dimensions. Similar results were obtained for perceived fair interpersonal treatment. Chu *et al.* (2005) also reported a positive relationship between organizational citizenship behaviour and both supervisor support and procedural justice.

In their recent monograph on organizational citizenship behaviour, Organ *et al.* (2006) discuss a number of studies that have tested the influence of both leadership and work environments on organizational citizenship behaviours. They note that instrumental and supportive leadership styles have generally been found to correlate positively with employee altruism, courtesy, conscientiousness, civic virtue, and sportsmanship. While it is not immediately clear why these relationships exists, it has been suggested (see Organ *et al.*) that instrumental and supportive leadership styles, in which leaders are "friendly and considerate of other's needs" and "[clarify] the groups goals" respectively (Muchinsky, 2006, p.422), are likely to be considered by employees to be helping behaviour emanating from leaders, leading to employees feeling obligated to reciprocate.

According to Organ *et al.* (2006), empirical research has generally shown that task characteristics, such as task autonomy, significance, and variety, influence organizational citizenship behaviours. Organ *et al.* also do discuss some of the explanations that have been suggested for these relationships. For instance, task identity, variety, and significance may be related to organizational citizenship behaviour through their impact on the meaningfulness of work. Other work environment variables that Organ *et al.* hypothesize may influence citizenship behaviours include group characteristics, such as group cohesiveness, and organizational characteristics, such as perceived organizational support.

Table 3.2 on page 52 summarises the antecedents and consequences of organizational citizenship behaviours. The next section considers organizational citizenship behaviours in school environments.

3.2.3 Organizational citizenship behaviours in school environments

Organizational citizenship behaviours have been shown to be important in school environments. The study by Allison *et al.* (2001) sought to determine (i) whether

Consequences	Managers' evaluation of employees
	Job performance (not clear-cut)
	Organizational performance and effectiveness
Antecedents	Demographic variables
	Dispositions and attitudes
	Organizational justice
	Leadership
	Task characteristics

Table 3.2: Consequences and antecedents of organizational citizenship behaviours

students engaged in organizational citizenship behaviours, and (ii) whether there was any relationship between a student's engagement in organizational citizenship behaviours and the particular student's academic performance; student performance was measured in terms of productivity (course load in credit hours multiplied by grade point average for previous term) and grade point average. Organizational citizenship behaviour was shown to be significantly positively related to both student productivity and grade point average. In particular, sportsmanship, conscientiousness, and civic virtue were significantly positively related to the productivity measure, while sportsmanship and conscientiousness were significantly positively related to grade point average.

DiPaola & Hoy (2005) investigated citizenship behaviours in a school environment. The researchers were specifically interested in the relationship between teacher organizational citizenship behaviour and student performance. Organizational citizenship behaviour was aggregated at the school — rather than measured at the individual — level. It correlated positively with student achievement; it was ($r = 0.30; p < 0.01$) for reading proficiency and ($r = 0.34; p < 0.01$) for mathematics proficiency. The researchers also demonstrated that even when controlling for socio-economic status, which consistently predicted student achievement (i.e. "wealthier school districts have higher academic achievement than poorer ones", p.40), organizational citizenship behaviour still significantly positively correlated with both reading (partial $r = 0.28; p < 0.01$) and mathematics (partial $r = 0.30; p < 0.01$) proficiency.

DiPaola & Tschannen-Moran (2001) investigated the relationship between organizational citizenship behaviour and school climate. Arguing that school climate is "a relatively enduring quality of the entire school that describes the collective perceptions of participants of routine behaviour and affects their attitudes and behaviour in the school" (p.434), DiPaola & Tschannen-Moran hypothesised that organizational citizenship behaviour and school climate would be positively correlated. Four dimensions of school climate were considered: (i) collegial leadership, "characterised by behaviour of the principal that is supportive and egalitarian" (p.437); (ii) teacher professionalism, which "describes teacher behaviour that is characterised by commitment to students and engagement in the teaching task" (p.437); (iii) academic press, which is "the extent to which the school is driven by a quest for excellence" (p.438); and (iv) community pressure which "describes strong efforts from parents and the community to influence school policy and functioning" (p.438). Collegial leadership, teacher professionalism, academic press, and community pressure all significantly correlated with organizational citizenship behaviour in the positive direction.

While teacher organizational citizenship behaviours are undoubtedly important for both private and public schools, the study by Garg & Rastogi (2006) suggests that there may be differences in their manifestations in private and public schools. The study found that public school teachers exhibited higher levels of citizenship behaviours than their private school counterparts. The researchers believe that this is explained by the fact that public schools favour "free working styles", which are not necessarily favoured in private schools. Interestingly, female teachers were found to exhibit higher levels of citizenship behaviours than their male counterparts. Additionally, older teachers (above 35 years of age), exhibited higher levels of citizenship behaviours than younger teachers.

With respect to the antecedents of citizenship behaviours among teachers, Bogler & Somech (2005) showed that teacher participation in decision making is important for inculcating such behaviours among teachers. Similarly, Cheng (2004), found that teacher organizational citizenship behaviour was largely contingent upon: the quality of the teacher's relationship with the school authorities, the degree of job support, the justice of rewards from the school, procedural justice, and job satisfaction. A qualitative study conducted by Oplatka (2006) found

through the use of semi-structured interviews among teachers, the components of organizational citizenship behaviour included 'supportive behaviours toward students and colleagues', 'initiation of changes and innovations in teaching', 'strong orientation toward the organization', and 'strong loyalty to the teaching profession'. The study also concluded that the school principal, the teacher's character and the school's climate were important determinants of teacher organizational citizenship behaviours.

3.3 Job satisfaction

Job satisfaction is "... an attitudinal variable that reflects how people feel about their jobs overall as well as about various aspects of them" (Spector, 2003, p.210). Locke (1976), cited in Brief (1998), defined it as "a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences". Brief (1998) notes that although as an attitude job satisfaction is multi-dimensional, most job satisfaction definitions are only concerned with its affective component. Researchers have tested the relationship between job satisfaction and many other variables, with some presumed to be its consequences, and others its antecedents; our discussion is modelled around the analytic framework due to Spector (2003).

3.3.1 Consequences of job satisfaction

3.3.1.1 Job performance

Initial interest in job satisfaction among researchers and practitioners was apparently driven by the 'Happy Worker Hypothesis' which suggested that job satisfaction would positively influence job performance (Pierce *et al.*, 2002); intuitively, one would expect satisfied workers to be more productive than dissatisfied workers. Empirical studies, however, have either totally failed to detect any relationship between satisfaction and performance, or have only detected a weak link between the two. The meta-analytic review by Iaffaldano & Muchinsky (1985), cited in Muchinsky (2006), reported a corrected correlation of 0.17 between satisfaction and performance. While the review by Judge *et al.* (2001) reported a

fairly high correlation of 0.31, Muchinsky (2006) points out, correctly, that even then, the amount of unexplained variance in the relation remains high at 91%.

Pierce *et al.* (2002) suggest a number of reasons that may account for the weak relationship between satisfaction and performance: first, performance measurement is not necessarily always accurate; second, employees may lack access to requisite resources; third, some jobs, such as factory assembly lines, have limited room for the employee to up their performance; fourth, employee satisfaction may emanate from job facets that have no bearing on performance; and fifth, performance is contingent upon factors, such as equipment breakdown, that employees have no control over.

3.3.1.2 Turnover

Job satisfaction is generally considered a significant predictor of turnover and turnover intentions. The reviews by Cotton & Tuttle (1986) and Tett & Meyer (1993) found that job satisfaction was negatively correlated with turnover. Other researchers who have reported a significant negative correlation between job satisfaction and turnover (or turnover intentions) are: Shaw (1999); Lambert *et al.* (2001); Lam *et al.* (2001), and van Dick *et al.* (2004).

Although researchers consistently report a relationship between satisfaction and turnover, the magnitude of the relationship is usually small (Lambert *et al.*, 2001); however, Shaw (1999) argued that it would be greater if researchers took into account an individual's disposition. Indeed, in his study he found that the (negative) relationship between satisfaction and turnover intention was stronger for individuals with high positive affect (i.e. generally optimistic individuals). Perceived alternative employment opportunities, too, have been found to mediate the job satisfaction–turnover relationship, with perceived alternative employment opportunities positively related to turnover intentions (Hwang & Kuo, 2006; Lambert *et al.*, 2001). Turnover also tends to be lower among good performers (McEvoy & Cascio, 1987).

3.3.1.3 Absence and tardiness

Intuitively, job satisfaction may be expected to negatively correlate with both employee absence and tardiness. Empirical findings, however, have been mixed. The studies by Matrunola (1996) and Goldberg & Waldman (2000) did not find any statistically significant relationship between job satisfaction and absenteeism. In contrast, in a study involving nurses in Hong Kong, Siu (2002) did find job satisfaction and absenteeism to be inversely related. In their 1985 meta-analytic review of the job satisfaction literature, Scott & Taylor concluded that job satisfaction was significantly related to absenteeism, suggesting that "use of overly small samples may have obscured the relationship" (p.608).

The study by Clark *et al.* (2005) concluded that job satisfaction, even when controlling for factors such as workplace incentives and disciplinary policies, was significantly related to employee lateness. However, they warn — somewhat ominously — that "a stricter working environment, in terms of supervision and monitoring of the worker, will secure reduced lateness, but may well create less pleasant working conditions, poorer relations between management and workers, lower job satisfaction, more lateness, and potentially other withdrawal behaviours" (p.299).

3.3.1.4 Health, well-being, and life satisfaction

Health, well-being, and life satisfaction are important correlates of job satisfaction. Daley & Parfit (1996) compared members of a corporate fitness clubs to non-members on the waiting list; members were physically healthier and more satisfied with their job than non-members. The meta-analysis by Faragher *et al.* (2005) reported a positive correlation between job satisfaction and good health (unadjusted $r = 0.312$; adjusted $r = 0.370$). Similarly, the earlier review by Cass *et al.* (2003) had also reported significant correlations between job satisfaction and general mental health (corrected $r = 0.360$) and general physical health (corrected $r = 0.307$).

Rice *et al.* (1980) reviewed the literature on the job satisfaction–life satisfaction relationship; they concluded that "for more than 90% of the cases, the direction of this relationship is positive; and none of the scattered negative relationships are statistically significant" (p.37). Similarly, Schmitt & Pulakos (1985)

reported that job satisfaction could be predicted from general satisfaction with life. Additionally, Kantak *et al.* (1992) found that a strong correlation between job satisfaction and life satisfaction existed irrespective of the job level, which is particularly noteworthy given that job satisfaction has been shown to be positively related to job level Oshagbemi (1997).

3.3.1.5 Organizational performance

The satisfaction – performance relationship appears to be stronger when performance is measured at the organizational level than at the individual level (Ostroff (1992), cited in Jex (2002). Indeed, in Ostroff's study, satisfaction correlated significantly with various measures of organizational performance, including reading achievement (0.30), Math achievement (0.31), Social Science achievement (0.24), percentage of students dropping out (−0.28), percentage of students with discipline problems (−0.27), and overall student satisfaction (0.44).

Koys (2001) found that while the relationship between employee satisfaction and profit was positive but not statistically significant, that between employee satisfaction and customer satisfaction was significant. The longitudinal nature of the study enabled him to conclude that employee satisfaction caused organizational effectiveness, and not the other way around. Other researchers who have reported positive correlations between employee satisfaction and organizational performance are Curral *et al.* (2005), Kim (2005), and Hwang & Chi (2005).

3.3.2 Antecedents of job satisfaction

3.3.2.1 Job characteristics

Job characteristics, "the nature and content of the job tasks" (Spector, 2003, p.217), have been shown to be related to job satisfaction (Lee *et al.*, 1983; Voydanoff, 1980). The meta-analysis by Fried & Ferris (1987) reported significant mean correlations between different dimensions of job characteristics and global job satisfaction: skill variety (−0.29); task identity (0.20); job scope (−0.45); job feedback (−0.29); and task significance (−0.26). More recently, Bhuian & Menguc (2002) and Thomas *et al.* (2004) have reported positive correlations between job characteristics and job satisfaction.

3.3.2.2 Work-family conflict

Work-family conflict is a construct that seeks to capture the ever growing conflict between the demands of work and those of family life (Spector, 2003). In the meta-analysis by Allen *et al.* (2000), the mean correlation between job satisfaction and work-family conflict was -0.23. More recently, Boles *et al.* (2003) also reported significant positive correlations between work-family conflict and different job satisfaction facets, though the results tended to be more important in women than in men. Similarly, Grandey *et al.* (2005) were able to predict work-family conflict from job satisfaction, demonstrating the bidirectional nature of the relationship between the two.

3.3.2.3 Personality

Though some studies (Thomas *et al.*, 2004) have failed to detect any relationship between job satisfaction and personality, in general, it would seem that personality traits do influence job satisfaction. In Silva's 2006 study, the Big Five personality traits correlated positively with facets of job satisfaction: extroversion correlated positively with pay ($r = 0.28$), supervision ($r = 0.51$), contingent rewards ($r = 0.47$), co-workers ($r = 0.24$), and communication ($r = 0.30$). Similar results were reported by Williamson *et al.* (2005): assertiveness ($r = 0.15$), conscientiousness ($r = 0.12$), emotional stability ($r = 0.37$), extroversion ($r = 0.17$), openness ($r = 0.12$), and optimism ($r = 0.40$) were significantly correlated with job satisfaction at the ($p < 0.01$) level.

3.3.2.4 Gender

Research into the association between job satisfaction and gender has returned mixed results, although in general it would appear that, at least for global job satisfaction, there is no difference between the genders (Spector, 2003). While the meta-analysis by Brush *et al.* (1987) did not detect any association between gender and job satisfaction among public sector employees, in the private sector males were generally more satisfied than females. Oshagbemi (2000) did not find any direct influence of gender on job satisfaction, though at higher ranks females reported higher job satisfaction than males. The study by Crossman &

Abou-Zaki (2003) found that females were more satisfied with pay than their male counterparts, while it was the reverse with supervision, with men reporting higher levels of supervision. Interestingly, women sometimes report higher satisfaction levels than men, even when they earn less (Sumner & Niderman, 2004).

It has also been demonstrated that while satisfaction among men and women may be influenced by the same factor, each factor is weighted differently by the different genders (Garcia-Bernal *et al.*, 2005). In their study, Garcia-Bernal *et al.* identified four factors influencing job satisfaction, namely, economic aspects, interpersonal relations, working conditions, and personal fulfillment. For both genders, personal fulfillment and economic aspects were significantly positively related to job satisfaction. However, interpersonal relationships were a significant predictor of job satisfaction for men but not for women, while job conditions were statistically significant for women but not for men.

3.3.2.5 Age and tenure

The meta-analytic review by Brush *et al.* (1987) detected significant influences of age, and to a lesser extent, organizational tenure, on job satisfaction. They reported a mean correlation of 0.22 between age and job satisfaction and 0.13 between organizational tenure and job satisfaction. When the data was disaggregated according to organization type the mean correlations between age and job satisfaction were 0.29 for manufacturing, 0.26 for service, and 0.15 for government. The mean correlations between organizational tenure and job satisfaction were 0.17 for manufacturing, and 0.11 for government. Thus, although some researchers (Lambert *et al.*, 2001) do report a negative correlation between tenure and job satisfaction, it would seem that in general older workers tend to be more satisfied than younger workers, and that satisfaction also increases with organizational tenure.

Some studies have reported a curvilinear relationship between job satisfaction and age (Birdi *et al.*, 1995; Clark *et al.*, 1996): job satisfaction declines with increasing age, and then, from around 30 years, begins to increase with increasing age. The satisfaction – age relationship may stem from the better working conditions and rewards older employees generally have (Birdi *et al.*, 1995). Warr

	Job performance
	Turnover
Consequences	Absence and tardiness
	Health, wellbeing, and life satisfaction
	Organizational performance
	Job characteristics
	Work–family conflict
	Personality
Antecedents	Gender
	Age
	Tenure

Table 3.3: Correlates of job satisfaction

(2001), cited in Spector (2003), also suggests that another factor may be that older employees have different values compared to their younger counterparts, so that older workers may in fact be quite satisfied with jobs disliked by younger employees.

Table 3.3 above summarises the antecedents and consequences of job satisfaction. The next section considers organizational citizenship behaviours in school environments.

3.3.3 Job satisfaction among teachers

Sargent & Hannum (2005) point out that teacher job satisfaction research has followed two streams, with the first taking the facet approach, and the second focusing on overall satisfaction with the job. They also note that teacher job satisfaction has been linked to job performance, motivation, commitment, absenteeism, attrition from the teaching profession, and even implementation of school and classroom reforms.

Demographic variables appear to influence teacher satisfaction. Sargent & Hannum (2005) found that older teachers, female teachers, and teachers with lower qualifications reported higher levels of satisfaction than their counterparts. In Sari's 2004 study, females reported more satisfaction than their male counter-

parts. Sargent & Hannum suggest that the relationship between job satisfaction and qualifications may be attributed to the fact that teachers with better qualifications perceive more alternative opportunities. Further, while the relationship between age and job satisfaction may simply be reflecting that teachers who like the teaching profession tend to stay with it, it may also be that teacher expectations change with time — and gender.

Stempien & Loeb (2002) compared the satisfaction levels of special education teachers (i.e. those teaching students with disabilities) to general education teachers. General education teachers reported significantly higher satisfaction levels than special education teachers. Additionally, for special education teachers, job satisfaction was significantly negatively correlated to length of time in the job.

Teacher job satisfaction may also be influenced by the expectations that individual teachers bring into the profession. Menon & Christou (2002) compared the satisfaction of current and future elementary school teachers with a number of aspects of the teaching job. Significant differences were detected between the two teacher groups, with pre-service teachers expressing more satisfaction with the headmaster's role, the school organization, the school climate, and teacher incentives and work conditions. Menon & Christou argue that initially high expectations of the teaching profession by incoming teachers may ultimately result in cognitive dissonance and job dissatisfaction.

3.4 Organizational commitment

Informally, organizational commitment may be thought of as a measure of the devotion and loyalty that an employee feels towards her employing organization. Mowday *et al.* (1979), cited in Meyer & Allen (1991, p.64), defined it as "the relative strength of an individual's identification with and involvement in a particular organization". Organizational commitment has also been defined as "the totality of internalized normative pressure to act in a way that meets organizational interests" (Wiener, 1982, p.418).

Organizational commitment is generally considered a multi-dimensional construct. Porter *et al.* (1974), cited in Benkhoff (1997, p.604), viewed organizational commitment as a three dimensional construct characterised by a) a strong belief

in and acceptance of the organization's goals and values; b) a willingness to exert considerable effort on behalf of the organization; c) a definite desire to maintain organizational membership. Meyer & Allen (1991) proposed a three-component model of organizational commitment which has been widely used:

> "*affective commitment refers to the employee's emotional attachment to, identification with, and involvement in the organization. Employees with a strong affective commitment continue employment with the organization because they **want** to do so. Continuance commitment refers to an awareness of the costs associated with leaving the organization. Employees whose primary link to the organization is based on continuance commitment remain because they **need** to do so. Finally, normative commitment reflects a feeling of obligation to continue employment. Employees with a high level of normative commitment feel that they **ought** to remain with the organization* [emphasis in original]". (Meyer & Allen, 1991, p.67)

Meyer and Allen (1991, 1997) argued that while all three dimensions of organizational commitment would negatively correlate with both the intention to leave the organization and voluntary turnover, their relationships with other work-related behaviours would differ:

1. Affective commitment should induce the desire to contribute constructively to the organization, and therefore be correlated negatively with absence and positively with job performance.

2. Continuance commitment would either be unrelated to work behaviour, or, because it may potentially lead to feelings of frustration and resentment, leading to 'inappropriate' work behaviour.

3. Normative commitment should lead employees to do what is 'right' for the organization, and should thus positively correlate with job performance, work attendance, and organizational citizenship behaviour; however, because normative commitment is based on feelings of obligation, such correlations should only be modest.

Meyer & Allen's sentiments — i.e. that the different dimensions of organizational commitment will have different correlates — have generally been borne out (Jaros, 1997; Meyer & Allen, 1997). Consequently, correlates of organizational commitment will be reviewed separately for each of the three components of commitment.

3.4.1 Correlates of affective organizational commitment

3.4.1.1 Turnover and turnover intentions

The influence of organizational commitment on turnover is fairly well established (Griffeth *et al.*, 2000). Samad (2006) reported a significant negative correlation ($r = -0.70; p < 0.05$). Similarly, the studies by Slattery & Selvarajan (2005) and Wasti (2003) also found negative correlations between affective organizational commitment and turnover intentions. Brown's 1996 meta-analysis, cited in Muchinsky (2006, p.321), reported a correlation of -0.28 between organizational commitment and turnover.

3.4.1.2 Tardiness and absenteeism

Affective commitment appears to be significantly correlated to both tardiness and absenteeism. In Blau (1986), affective commitment significantly negatively correlated with unexcused tardiness, though not with unexcused absence. Dishon-Berkovits & Koslowsky (2002) found that punctual employees scored significantly higher on commitment than did tardy employees. Similarly, when Burton *et al.* (2002) tested the relationship between motivation to attend and affective commitment, they found the two to be positively correlated ($r = 0.49; p < 0.01$).

3.4.1.3 Job performance

In an extensive meta-analytic literature review involving 93 published studies, Riketta (2002) found attitudinal commitment to be correlated (corrected mean correlation = .20) with job performance. The correlation was higher for white-collar workers compared to blue-collar workers. Additionally, studies involving self-reports tended to report a higher correlation between commitment and job

performance than those using supervisor ratings, though this may simply have been a manifestation of so-called *method effect* i.e. additional covariation being introduced by the measurement approach (Brown, 2006, p.3).

3.4.1.4 Person characteristics

Meyer & Allen (1997) distinguish between demographic variables, such as educational level, age, gender, and tenure, and dispositional variables, including personality and values. Studies have explored the relationship between both types of person characteristics and affective organizational commitment; results have been mixed, with some reporting statistically significant relationships, and others reporting no relationships for the same variables:

1. *Organizational tenure*: tenure has been found to be positively correlated with affective organizational commitment (Marchiori & Henkin, 2004; Tao *et al.*, 1998).

2. *Gender*: Karrasch (2003) did not find any significant relationship between gender and affective commitment, though the earlier study by Angle & Perry (1981) had found women to be more committed than their male counterparts, even though the latter were generally older and had longer organizational tenure. Although it is increasingly becoming less of a factor, it may be that more alternatives — in terms of employment opportunities — are available to men than to women. Another factor may be family commitments, which may be expected to weigh more heavily on females than on males, further negatively impacting on the availability of alternative opportunities for the former.

3. *Age*: positive correlations have been reported between age and affective organizational commitment (Angle & Perry, 1981; Steers, 1977), though Meyer & Allen (1997) are reluctant to conclude that age influences affective commitment since the results may simply be a result of the fact that different generational cohorts that have been studied may have undergone different experiences.

4. *Personality*: Organizational commitment appears to vary across personalities and be related to some aspects of national culture: in a study covering 49 countries, Gelade *et al.* (2006, p.g542) concluded that "affective commitment is high in counties where the population is extrovert and low in countries where the population is neurotic", and that it is "negatively related to societal cynicism and positively to egalitarian commitment", though in general, "most cultural dimensions are unrelated to [affective organizational commitment]".

5. *Education Level*: Angle & Perry's 1981 study reported "... a steady decline in commitment across eight ascending educational level categories". Availability of alternative employment opportunities, which are likely to more abundant for the more educated individuals, may be a factor.

3.4.1.5 Organizational characteristics

Meyer & Allen (1997) cite a number of studies that suggest that organizational characteristics may influence the development of affective organizational commitment. In particular, they allude to organizational structure, and the design and communication organizational policies as potential antecedents of affective organizational commitment.

3.4.1.6 Work experiences

Meyer & Allen (1997) identified job scope, the employee's role in the organization, and their relationship with their supervisor(s) as work experiences that impact upon affective organizational commitment. They cite a number of studies that have demonstrated that organizational commitment is correlated with the 'job challenge', 'degree of autonomy', and 'variety of skills' facets of job scope, as well as with leadership. More recently, affective organizational commitment was found to be positively correlated with supportive leader behaviours (Perryer & Jordan, 2005).

In Kidd & Smewing's 2001 study, the relationship between commitment and supervisor support was different for men and women. A positive linear relationship was found between the two variables for women. For men, at high or low

levels of perceived super support, supervisor support and organizational commitment were positively associated. However, at moderate levels of supervisor support, organizational commitment decreased with increasing support. Kidd & Smewing argue that their results indicate that having a mentor is more important for women than it is for men. Cheng's 2004 study also showed that leadership and innovative organizational culture influenced organizational commitment.

Payne & Huffman (2005) undertook a two-year longitudinal study of the relationship between mentoring and organizational commitment in the US army. As predicted, it was found that affective and continuance commitment tended to be higher among mentored officers than among non-mentored officers, suggesting that mentoring causes commitment.

3.4.2 Correlates of continuance organizational commitment

Continuance organizational commitment is based on an awareness of the costs associated with leaving the employing organization (Meyer & Allen 1991, 1997), and may thus be understood in terms of perceived sunk costs (Somers, 1995), which are in essence incurred costs that cannot be recovered. Samad (2006) reported a significant association between continuance commitment and turnover intentions ($r = -0.55$). However, Meyer & Allen (1997) also argue that (unrecoverable) investments and (lack of) alternatives will only influence commitment if they are recognised as such by the employee in question. Meyer & Allen (1997) reviewed a number of studies that found correlations between continuance commitment and such variables as skill transferability, education, side bets, and being the 'provider' in one's family. The studies showed that employee continuance commitment grew with perceptions that their skills were not transferable. Investment, such as retirement money, status, and job security, were positively correlated with continuance commitment. Employees who considered themselves breadwinners in their family also exhibited higher levels of continuance commitment than those who did not.

Continuance commitment also appears to be related to demographic variables. Suliman & Iles (2000) found continuance commitment to be significantly related to gender, age, level of education, and organizational tenure. Karrasch

(2003), too, found gender to be related to continuance commitment, while in the study by Marchiori & Henkin (2004) organizational tenure correlated positively with continuance commitment. While Meyer & Allen (1997) acknowledge that investments (i.e. antecedents of continuance commitment) that employees make in organizations tend to increase with time, they nevertheless urge caution in interpreting findings from studies that use time-based variables, such as age and tenure; skills, for instance, may increase with tenure and yet have the effect of increasing available employment opportunities. Thus, Meyer & Allen see age and tenure as surrogates of accumulated investments and perceived alternatives rather than direct antecedents of continuance commitment.

Wasti (2003) reported a significant negative association between continuance commitment and turnover intentions. Carson & Carson (2002) reported some correlations between the 'low alternatives' dimension of continuance commitment and career commitment ($r = -0.31, p < 0.01$), career satisfaction ($r = -0.25, p < 0.01$), and education ($r = -0.10, p < 0.05$). Further, the personal sacrifices dimension correlated with job withdrawal cognitions ($r = -0.27, p < 0.01$). Suliman & Iles (2000) tested, and rejected, the hypothesis that continuance commitment was *not* related to job performance. In contrast, Barksdale Jr. *et al.* (2003) did not find any relationship between job performance and continuance commitment. Finally, Payne & Huffman's (2005) suggested that continuance commitment may also be related to mentoring; mentored officers reported higher levels of continuance commitment than non-mentored officers.

3.4.3 Correlates of normative organizational commitment

Normative commitment "refers to an employee's feelings of obligation to remain with the organization", and results in the employee remaining with the organization because they believe "it is the 'right and moral' thing to do" (Meyer & Allen, 1997, p.60). Meyer & Allen discuss three different processes through which normative commitment is believed to develop:

1. *Socialization*: Wiener (1982, p.418), defined commitment as "the totality of internalized normative pressures to act in a way that meets organizational interests", whose immediate antecedents are "organizational identification

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and generalized values of loyalty and duty", and traces the development of normative commitment to the socialisation process that individuals go through as new members of an organization.

2. *Reprocity*: when an organization makes an investment in the employee, which investment the employee finds difficult or impossible to reciprocate, the employee may feel obligated to remain in the employ of the organization.

3. *Psychological contract*: development of continuance commitment might be linked to the psychological contract that links the employee to the organization. As Muchinsky (2006, p.323) points out, "employees have beliefs about the organization's obligation to them, as well as their obligations to the organization"; the psychological contract is the resulting "implied exchange relationship ... between [the] employee and the organization".

The review by Meyer *et al.* (2002) confirmed that normative commitment was significantly correlated with withdrawal cognition and turnover. Other researchers have associated normative commitment with job performance (Suliman & Iles, 2000). Additionally, in the study Suliman & Iles, normative commitment was found to be related to employee age, gender, education level, and organizational tenure. Butler & Vodanovich (1992) also linked normative commitment to organizational tenure. In the 2003 study by Karrasch, gender was not found to significantly influence normative commitment.

Recent studies that have looked at normative commitment include Carmeli (2005), Bloemer & Oderkerken-Schröder (2006), and Ozag (2006). In a study investigating the determinants of job involvement among senior executives, Carmeli (2005) normative commitment was found to be positively correlated with the protestant work ethic. Normative commitment also mediated the relationship between protestant work ethic and job involvement. Bloemer & Oderkerken-Schröder (2006) found that employee relationship proneness, which captures "the idea that employees differ in the extent to which they are intrinsically inclined to engage in a relationship with their employer" (p.253), was a strong predictor of normative commitment i.e. the higher an employee's scores "stable tendency ... to engage in relationships with is employer" (p.254), the more likely they are to

Dimension	Correlates
Affective	Job satisfaction
	Turnover and turnover intentions
	Tardiness and absenteeism
	Job performance
	Person characteristics
	Organizational characteristics
	Work experiences
Continuance	Turnover and turnover intentions
	Lack of skill transferability
	Investment (e.g. job security)
	Demographic variables
Normative	Withdrawal
	Turnover and turnover intentions
	Demographic variables

Table 3.4: Correlates of the different dimensions of organizational commitment

develop normative commitment to the organization. Normative commitment has also been investigated among merger survivors, where it was found to be positively correlated with trust of the merged organization ($r = 0.623; p < 0.01$) and hope to succeed in the merged organization ($r = 0.627; p < 0.01$) (Ozag, 2006).

Samad (2006) reported a significant negative correlation ($r = -0.67; p < 0.05$) between normative commitment and turnover. Similarly, a significant negative relationship has been reported between normative commitment and turnover intentions (Wasti, 2003).

Table 3.4 on page 69 summarises the antecedents and consequences of organizational commitment. The next section considers organizational commitment among school teachers.

3.4.4 Organizational commitment among school teachers

A number of studies have looked at organizational commitment in school settings; collectively they attest to the importance of commitment in such settings.

In his doctoral dissertation, Hawkins (1998) investigated the antecedents of organizational commitment among high school principals in the USA. Commitment correlated only weakly with age ($r = -0.004$), moderately with organizational tenure ($r = 0.25$), and not at all with gender. However, Joiner & Bakalis (2006) found that among casual academics employed by an Australian university, personal characteristics (gender, marital status, family responsibilities, and level of education) influenced organizational commitment.

Somech & Bogler (2002) did not detect any significant influences of demographic variables (education, tenure, gender) on teacher organizational or professional commitment. They reported positive correlations between teacher participation in managerial decision making and both professional and organizational commitment. However, teacher participation in decision making in the technical domain only correlated with teacher professional, but not organizational, commitment.

Riehl & Sipple (1996) found that school climate interacted with teacher commitment. Specifically, teacher commitment was high in environments in which teachers were provided with adequate resources, intrusions on teaching were minimised, schools were orderly, and teachers received administrative and instructional support from principals and peers respectively.

In the study by Dee *et al.* (2003) teacher empowerment correlated positively with commitment. Joiner & Bakalis (2006) also found that job-related characteristics (supervisor support, co-worker support, role clarity, and resource availability), and job involvement characteristics (tenure, second job, and post-graduate study at employing university) all influenced commitment. Hawkins (1998) reported a moderately strong correlation between commitment and organizational support ($r = 0.66$). Koh *et al.* (1995) found that while transactional leadership alone did not account for much variance in organizational commitment, when taken with transformational leadership, they accounted for a significant variance in commitment.

Citing Ference *et al.*'s 1977 definition of career plateau — "the point in a career where the likelihood of additional hierarchical promotion is very low" — the study by Nachbagauer & Riedl (2002) sought to determine whether career plateaus had any effect on organizational commitment. Three dimensions of

career plateau were identified, namely, (i) the *structural subjective* dimension, which assessed the likelihood of further advancement, (ii) the *structural objective* dimension, calculated as tenure above average of the group to which the employee belongs, and (iii) *task stagnation*, which tapped work content and routine. Subjective structural career plateau negatively correlated with affective commitment and was not significantly related to continuance commitment. In contrast, task stagnation was positively correlated with continuance commitment, and unrelated to affective commitment.

3.5 Conclusions

This chapter reviewed the empirical literature on organizational citizenship behaviour, job satisfaction, and organizational commitment. Organizational citizenship behaviour, though often not addressed in formal performance evaluations, is essential for the smooth functioning of organizations, and is generally positively related to organizational performance. The two workplace attitudes, job satisfaction and organizational commitment, have consistently be shown to be strong predictors of organizational citizenship behaviour. However, even apart from their relationship behaviour, job satisfaction and organizational commitment are important organizational variables because they are related to such other variables as turnover and tardiness. This chapter also considered the manifestation of organizational citizenship behaviour, job satisfaction, and organizational commitment in school environments.

As explained previously (see Chapter 1), the link between organizational citizenship behaviour and knowledge sharing behaviour is the crux of this study; job satisfaction and organizational commitment feature because being important predictors of organizational citizenship behaviour, they are also anticipated to be strong predictors of knowledge sharing behaviour. This chapter and the last reviewed the literature pertaining to the constructs investigated in this thesis i.e. knowledge sharing behaviour, organizational citizenship behaviour, job satisfaction, and organizational commitment. In the next chapter, Chapter 4, the discussion turns to issues of research design, including the conceptual framework (see Figure 4.1 on page 74) linking these constructs.

Chapter 4

Research design

4.1 Introduction

This study empirically investigates the relationships among knowledge sharing behaviour, organizational citizenship behaviour, job satisfaction, and organizational commitment. Previous chapters reviewed in depth the literature pertaining to these four constructs. The present chapter is an exposition of the research design that provided the framework within which the empirical aspects of the study were conducted. In particular, it addresses the four issues that Punch (2005) has identified as being the crux of research design: the research strategy, the conceptual framework, the unit(s) of analysis, and the data collection and analysis techniques to be employed.

Since it seeks to quantify relationships among constructs, the current study is explanatory in intent. Among the quantitative explanatory research strategies, the experiment is often considered the gold standard; however, as Punch (2005) notes, many important questions in social research — and this is true of the questions investigated in the current study — cannot be studied experimentally. The research strategy adopted for the current study, therefore, is the correlational survey, also known as the analytic survey (Gay, 1996). Further, because the study investigates relationships among workplace attitudes and behaviour at the individual level, the unit of analysis is the individual employee. The other three concerns of research design that Punch (2005) mentions are addressed in the rest of this chapter.

4.2 Conceptual framework

As defined by Organ *et al.* (2006, p.3), organizational citizenship behaviour is "... individual behaviour that is discretionary, not directly related or explicitly recognized by the formal reward system, and in the aggregate promotes the efficient and effective functioning of the organization". Knowledge sharing, on the other hand, is " ... behaviour by which an individual **voluntarily** provides other social actors ... with access to his or her unique knowledge and experiences" [our emphasis] (Hansen & Avital, 2005, p.6) i.e. knowledge sharing behaviour is discretionary. Furthermore, knowledge sharing behaviour has been shown to be positively correlated with organizational effectiveness and other closely related organizational desirable outcomes (Chen, 2006; Du *et al.*, 2007; Jacobs & Roodt, 2007; Lin, 2007b; Pai, 2006; Yang, 2007a). Thus, knowledge sharing behaviour is both discretionary and positively related to organizational effectiveness, suggesting that knowledge sharing behaviour is in fact a type of organizational citizenship behaviour.

Now, if knowledge sharing behaviour is a kind of organizational citizenship behaviour, then it can be expected, firstly, that the two should be positively correlated, and, secondly, that predictors of organizational citizenship behaviour should also be predictors of knowledge sharing behaviour. This expectation directly leads to this study's conceptual framework, shown as Figure 4.1 on the following page. Job satisfaction and organizational commitment are in the framework because they have been consistently shown to be robust predictors of organizational citizenship behaviour; indeed, Penner *et al.* (1997, p.112) boldly assert that "there is little question that the affective and cognitive components of job attitudes are causally related to [organizational citizenship behaviours]". The relationships implied by this conceptual framework are considered further as the hypotheses the study seeks to test are developed.
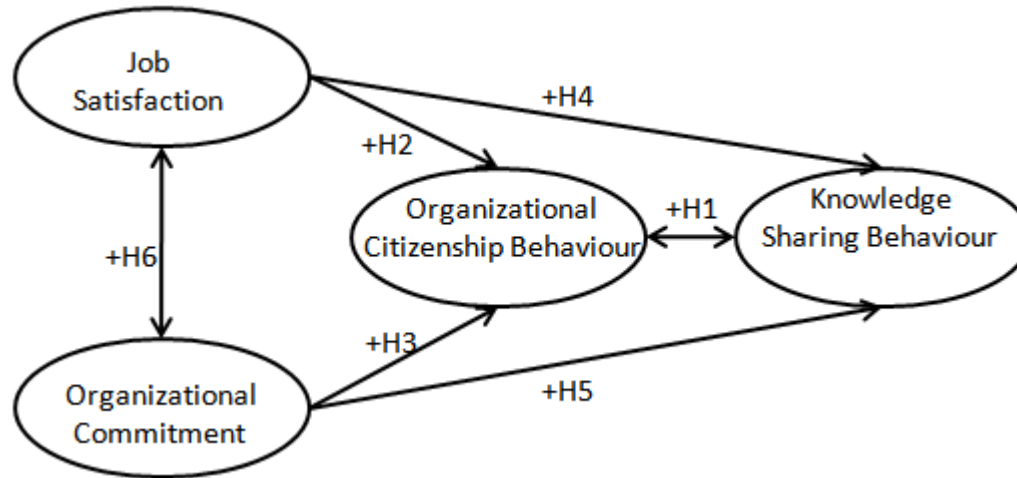
Figure 4.1: Conceptual framework

4.3 Hypothesis development

4.3.1 Knowledge sharing behaviour and organizational citizenship behaviour

The first research questions the study sought to answer was as follows:

i) What is the nature of the relationship between organizational citizenship behaviour and knowledge sharing behaviour?

As intimated above, this study's thesis is that knowledge sharing behaviour is a type of organizational citizenship behaviour; as such, the two are expected to be positively correlated. Accordingly, the first hypothesis of this study is as follows:

H1: Knowledge sharing behaviour and organizational citizenship behaviour are positively correlated.

4.3.2 Job satisfaction, organizational commitment and organizational citizenship behaviour

The second and third research questions the study sought to answer were as follows:

(ii) How is job satisfaction related to organizational citizenship behaviour?
(iii) How is organizational commitment related to organizational citizenship behaviour?

Earlier in this chapter, Penner *et al.* (1997, p.112) were cited as having concluded that "there is little question that the affective and cognitive components of job attitudes are causally related to [organizational citizenship behaviours]". Following a comprehensive review of the literature, Podsakoff *et al.* (2000, p.532) observed that "... job attitudes ... [including job satisfaction and organizational commitment] ... appear to be more strongly related to [organizational citizenship behaviour] than the other antecedents". More recently, Chu *et al.* (2005)

investigated the antecedents of organizational citizenship behaviours among hospital nurses in a Taiwan regional hospital, and found that job satisfaction and job involvement significantly influenced the nurse's organizational citizenship behaviours.

H2: Job satisfaction positively influences organizational citizenship behaviour.
H3: Organizational commitment positively influences organizational citizenship behaviour.

4.3.3 Job satisfaction, organizational commitment and knowledge sharing behaviour

The fourth and fith research questions the study sought to answer were as follows:

(iv) How is job satisfaction related to knowledge sharing behaviour?
(v) How is organizational commitment related to knowledge sharing behaviour?

If, as the thesis of this study suggests, knowledge sharing behaviour is a type of organizational citizenship behaviour, then predictors of organizational behaviour should also be predictors of knowledge sharing behaviour; consequently, it is hypothesized as follows:

H4: Job satisfaction positively influences knowledge sharing behaviour.
H5: Organizational commitment positively influences knowledge sharing behaviour.

4.3.4 Job satisfaction and organizational commitment

The sixth research question the study sought to answer was as follows:

vi) How are job satisfaction and organizational commitment related?

Research suggests that job satisfaction and organizational commitment are strongly positively correlated. In their meta-analysis, Mathieu & Zajac (1990), cited in Spector (2003), reported a correlation of 0.49 between job satisfaction and organizational commitment. Similarly, in the meta-analysis by Brown (1996), cited in Muchinsky (2006), the average correlation between job satisfaction and organizational commitment was 0.53. Consequently, it is hypothesized as follows:

H6: Job satisfaction and organizational commitment are positively correlated.

4.3.5   Structural equation model

The seventh research question the study sought to answer was as follows:

vii) Can a structural equation model be built relating knowledge sharing behaviour, organizational citizenship behaviour, job satisfaction, and organizational commitment?

The conceptual framework developed earlier suggests that a structural equation model may be built linking knowledge sharing behaviour, organizational citizenship behaviour, job satisfaction, and organizational commitment; indeed, the previous hypotheses inherently derive from such a model. Thus, it is hypothesized as follows:

H7: A structural equation model can be built relating knowledge sharing behaviour, organizational citizenship behaviour, job satisfaction, and organizational commitment.

4.3.6   The role of demographic variables

The final research question is concerned with the relationships among demographic variables (i.e. age, gender, organizational tenure, and occupational tenure) on the one hand, and the study variables (i.e. knowledge sharing behaviour, organizational citizenship behaviour, job satisfaction, and organizational commitment) on the other:

(viii) Do demographic variables (age, gender, organizational tenure, and occupational tenure) influence knowledge sharing behaviour, organizational citizenship behaviour, job satisfaction, and organizational commitment?

A number of studies have suggested that demographic variables such as gender, age, and tenure influence each of the four constructs investigated in this study. For instance, in Taylor's 2004 study, usage of knowledge management systems was found to vary by gender and personality; males consistently reported higher levels of usage of email, data mining, knowledge repository, and yellow page components of the knowledge management systems studied. Additionally, Boardia *et al.* (2006) found that females had higher perceptions of the benefits of knowledge sharing than their male counterparts. Bakker *et al.* (2006) reported a positive correlation between team tenure and engagement in knowledge sharing behaviour. Furthermore, the study by Boardia *et al.* detected a positive association between organizational tenure and knowledge sharing behaviour. Although the meta-analysis by Organ & Ryan (1995) did not detect any relationship between either gender or organizational tenure and organizational citizenship behaviour, Alotaibi (2001) reported a positive association between organizational tenure — but not nationality, sex, or age — and organizational citizenship behaviour.

Research suggests that demographic variables may be related to both job satisfaction and organizational commitment. Males and females sometimes report different levels of satisfaction for different dimensions of job satisfaction (Crossman & Abou-Zaki, 2003), and are influenced by different factors (Garcia-Bernal *et al.*, 2005). Age and tenure have also been found to be related to job satisfaction (Brush *et al.*, 1987). Organizational commitment, too, has been found to be related to organizational tenure (Marchiori & Henkin, 2004; Tao *et al.*, 1998), gender (Angle & Perry, 1981), age (Angle & Perry, 1981; Steers, 1977), personality (Gelade *et al.*, 2006), and educational level (Angle & Perry, 1981).

Thus, it is hypothesized as follows:

H8: Demographic variables (gender, age, organizational tenure, and occupational tenure) interact with each of knowledge sharing behaviour,

> *organizational citizenship behaviour, job satisfaction and, organizational commitment.*

4.4 Instrumentation

4.4.1 Knowledge sharing behaviour

A review of the knowledge sharing literature indicates that no universally accepted knowledge sharing scale exists: as noted in Chapter 2, in some studies, knowledge sharing is measured in terms of contributions to existing knowledge management systems, while other studies measure attitudes towards knowledge sharing, and still others are concerned with the intention to share knowledge.

For studies that seek to measure knowledge sharing in general, not just through knowledge management systems, the use of self–reports is quite common. Among the self–report knowledge sharing scales, the one developed by Van den Hoof and colleagues (de Vries *et al.*, 2006; van den Hooff & de Leeuw van Weenen, 2004; van den Hooff & de Ridder, 2004) is particularly attractive because of its ability to measure two dimensions of knowledge sharing, namely, knowledge donating, and knowledge collecting. The scale items are reproduced here as Table 4.1 on page 80.

The scale has been used by a number of researchers, all of whom have been satisfied with its psychometric properties: van den Hooff & de Ridder (2004) reported Cronbach's alpha of 0.85 for donating and 0.78 for collecting; van den Hooff & de Leeuw van Weenen (2004) reported Cronbach's alpha of 0.83 for knowledge donating and 0.90 for knowledge collecting; de Vries *et al.* (2006) reported Cronbach's alpha of 0.75 for knowledge collecting and 0.84 for knowledge donating.

Lin (2007b) modified van den Hooff & de Leeuw van Weenen (2004)'s knowledge sharing scale to produce the scale shown in Table 4.2 on page 81, where the number in brackets indicates each item's factor loading. In Lin's version of the knowledge sharing scale, no reference is made to departments within the company; this is particularly useful in school contexts where teachers are assigned to departments on the basis of the subjects they teach, raising the possibility of a

Knowledge donating	
1.	When I've learned something new, I see to it that colleagues in my department can learn it as well
2.	I share the information I have with colleagues within my department
3.	I share my skills with colleagues within my department
4.	When I've learned something new, I see to it that colleagues outside of my department can learn it as well
5.	I share information I have with colleagues outside of my department
6.	I share my skills with colleagues outside of my department
Knowledge collecting	
7.	Colleagues within my department tell me what they know, when I ask them about it
8.	Colleagues within my department tell me what theyr skills are, when I ask them about it
9.	Colleagues outside of my department tell me what they know, when I ask them about it
10.	Colleagues outside of my department tell me what their skills are, when I ask them about it

Table 4.1: Knowledge sharing scale

[Source: (Van den Hooff & de Ridder, 2004, p.123)]

Knowledge donating (Composite reliability: 0.78)	
1.	When I have learned something new, I tell my colleagues about it (0.72)
2.	When they have learned something new, my colleagues tell me about it (0.81)
3.	Knowledge sharing among colleagues is considered normal in my company (0.83
Knowledge collecting (Composite reliability: 0.80)	
4.	I share information I have with colleagues when they ask for it (0.75)
5.	I share my skills with colleagues when they ask for it (0.81)
6.	Colleagues in my company share knowledge with me when I ask them to (0.84)
7.	Colleagues in my company share their skills with me when I ask them to (0.70)
Items to explore what knowledge is being shared [Not part of original scale]	
8.	I share information about the teaching profession with my colleagues
9.	I share information about the subject I teach with colleagues in my school
10.	I share information about administrative issues with colleagues in my school
11.	I share pertinent information about students with colleagues in my school
12.	Colleagues in my school share information about the teaching profession with me
13.	Colleagues in my school share information about the subject I teach with me
14.	Colleagues in my school share information about administrative issues with me
15.	Colleagues share pertinent information about students with me

Table 4.2: Final knowledge sharing scale

[Source: Modified from (Lin, 2007b, p.332)]

teacher belonging to more than one department. In any case, there is no intention in the current study to investigate the influence of the subject(s) taught, on knowledge sharing behaviour — and no suggestion from the reviewed literature that this might be a worthwhile endeavour to pursue. Lin's knowledge sharing instrument is adopted for use in the current study. For the purposes of this study, the scale is modified, replacing 'company' with 'school' to make the instrument directly relevant to the study participants.

4.4.2 Organizational citizenship behaviour

According to Organ *et al.* (2006), some forty different forms of organizational citizenship behaviours are discussed in the literature. Not surprisingly, many different scales have been devised to measure organizational citizenship behaviour. An often cited organizational citizenship behaviour scale developed by Smith *et al.* (1983) mentions two types of organizational citizenship behaviours, namely, altruism and compliance (Organ *et al.*, 2006). Altruism is sometimes referred to as helping and is directed at specific individuals. Items that measure altruism include the following: "Helps other employees with their work when they have been absent", and "Helps others when their workload increases (assisting other until they get over their hurdles)". Rather than target specific individual, compliance contributes to the organization; items here include "Gives advance notice when unable to come to work" and "Does not take extra breaks".

DiPaola & Tschannen-Moran (2001) adopted Smith *et al.*'s 1983 organizational citizenship scale, originally developed for use in private sector organizations, and used it in school environments:

> *"The adaptation began with three panels, each consisting of 15 public school educators, interpreting the individual items of their instrument into corresponding items that would apply to a school setting. Interpretations of the 16 items were distilled into 16 corresponding statements that would have relevance to members of public school organizations. The 16 school [organizational citizenship behaviour] items were paired with corresponding items of the original instrument and submitted to 3 different panels, each consisting of 12 school educators,*

who were instructed to judge whether the items corresponded appropriately. The panel members comments were used to finalize the Organizational Citizenship Behavior in Schools Scale (OCBSS), which was then field tested in 18 public schools. As a result of this testing, two items were reworded, five were removed, and four new items were constructed. The resulting instrument contained 15 items measuring organizational citizenship behaviour in schools."

DiPaola & Tschannen-Moran (2001, p.436)

In a study involving elementary, middle, and secondary schools, DiPaola *et al.* (2006) made the following observations about their organizational citizenship behaviour scale:

"… the factor structure supported the construct validity of organizational citizenship behaviour. All of the items loaded strongly and predictably on a single first-order factor. The factor structure was essentially the same and stable in all three samples. Second, the hypothesis results reinforced the predictive validity of the construct of organizational citizenship. Finally, the reliability coefficients of the [scale] were strong; in fact, in the elementary and middle school samples they were the same, a robust 0.93, and in the high school sample the reliability was still a healthy 0.86." (DiPaola *et al.*, 2006)

While DiPaola & Tschannen-Moran's scale does appear to have strong psychometric properties, it does not measure individual organizational citizenship behaviour; rather, with items such as "teachers voluntarily help new teachers", it focuses on teacher perceptions of organizational citizenship behaviours. DiPaola (2007), via personal communication, has indicated that he, together with his colleagues, are in the process of developing a scale that measures citizenship behaviour at the individual teacher level; items for the scale, referred to as the *Individual Citizenship Behavior Scale*, are shown in Table 4.3 on page 85. The current study uses DiPaola's Individual Citizenship Behavior scale to measure organizational citizenship behaviour as reported by individual teachers: the original

scale was modified to suit the current context, with some items altered and others dropped altogether (see Appendix B for the actual items used in the present study).

4.4.3 Job satisfaction

Stempien & Loeb (2002) lament that studies on job satisfaction among teachers tend to use their own scales whose reliability and validity have not been established. This is rather unfortunate because the broader Organizational Behaviour literature reports a large number of job satisfaction scales with good psychometric properties, including the following cited in standard Industrial and Organization Psychology texts such as Muchinsky (2006), Spector (2003), and Jex (2002): the Faces Scale, the Job Descriptive Index, the Job in General Scale, the Minnesota Satisfaction Questionnaire, and the Job Satisfaction Survey. While in general these scales provide valid and reliable measures of job satisfaction, according to Muchinsky (2006), the Job Descriptive Index and the Minnesota Satisfaction Questionnaire, in particular, are highly regarded by job satisfaction researchers.

The Job Descriptive Index has some 72 items that measure five facets of job satisfaction, namely, work, pay, promotion opportunities, supervision, and co-workers (Spector, 2003). The Minnesota Satisfaction Questionnaire, on the other hand, comes in two versions: consisting of 100 items, the long form measures 20 dimensions of job satisfaction; the short form has 20 items, and can be used to measure either global job satisfaction, or intrinsic and extrinsic satisfaction (Spector, 2003). For a study, such as the current one, that considers job satisfaction with a number of other variables, the Job Descriptive Index and the long form of the Minnesota Satisfaction Questionnaire are unattractive because of their length; the same may be said of the Job Satisfaction Survey (36 items), Job In General (18 items), and Minnesota Satisfaction Questionnaire Short Form (20 items).

Another widely cited job satisfaction scale — which incidentally has been used to measure teacher job satisfaction (Stempien & Loeb, 2002) — was developed by Brayfield & Rothe (1951); the scale is shown in Table 4.4 4.4 on page 87 where the 'R' indicates reverse-worded items. Although at 18 items it is rather

1.	I go out of my way to introduce myself to substitute teachers
2.	I try to help substitute teachers any way I can
3.	I try to help my colleagues any way I can
4.	I sponsor extra curricular activities
5.	I give colleagues advanced notice of changes in my schedule
6.	I volunteer to serve on committees
7.	I take things as they come in school without complaining
8.	I make it a point to arrive on time for work
9.	I spend a lot of my own time helping students
10.	I avoid keeping colleagues waiting
11.	I make a lot of suggestions to improve the overall quality of our school
12.	I am conscientious about getting to appointments on time
13.	I always make time to deal with parental concerns
14.	I am considerate of my colleagues' time
15.	I voluntarily attend important school functions
16.	I resent being asked to serve on committees
17.	Non-contract time is my own time
18.	Too many of my colleagues don't take responsibility for their actions and decisions
19.	I don't have enough time to help others do their jobs
20.	I go out of my way to help new teachers
21.	I go out of my way to help colleagues

Table 4.3: DiPaola (2007)'s "Individual Citizenship Behavior Scale"

long, a shorter version, which uses six items to measure global job satisfaction, has been used successfully by a number of researchers, including Agho *et al.* (1992). Indeed, Agho *et al.* (1992) cites the following studies who have found the six-item scale both reliable and valid: Brooke, Jr *et al.* (1988), Price & Mueller (1981, 1986), Sorenson (1985), and Wakefield (1982). In their study, Agho *et al.* reported a Cronbach's coefficient alpha of 0.90. The six-item Brayfield & Rothe job satisfaction scale used in this study was sourced from Agho *et al.* (1992) and is shown here as Table 4.5 on page 88; note that in this shorter scale, none of the items are reverse worded. Incidentally, the literature does suggest that measures that measure global job satisfaction directly are actually superior to those that attempt to measure it indirectly by first tapping its various facets of the job (Christen *et al.*, 2006).

4.4.4 Organizational commitment

The 1990 meta-analytic review of the organizational commitment literature undertaken by Mathieu & Zajac, cited in Benkhoff (1997), concluded that the Organizational Commitment Questionnaire developed by Porter *et al.* (1974) was by far the most frequently cited commitment measurement scale in the literature. This scale has also been fruitfully utilised in knowledge sharing research (van den Hooff & de Leeuw van Weenen, 2004; van den Hooff & de Ridder, 2004).

Meyer & Allen (1991) developed a three component model of organizational commitment — and a concomitant scale for measuring the three components of commitment — that has been widely cited in the literature; the scale has been found to have good psychometric properties (Meyer & Allen, 1997; Meyer *et al.*, 2002), even outside Western cultures (Meyer *et al.*, 2002), including African contexts (Laka-Mathebula, 2004). Meyer & Allen (1997) explain how their organizational commitment questionnaire was developed

> *"... definitions of the three constructs were used to develop an initial pool of items that was then administered to a sample of men and women working in various occupations and organizations. Items were selected for inclusion in the scales on the basis of a series of decision rules that took into account the distribution of responses on the 7-point*

1.	My job is like a hobby to me
2.	My job is usually interesting enough to keep me from being bored
3.	It seems that my friends are more interested in their jobs (R)
4.	I consider my job rather unpleasant (R)
5.	I enjoy my work more than my leisure time
6.	I am often bored with my job (R) (Used in six-item version)
7.	I fee fairly well satisfied with my present job (Used in six-item version)
8.	Most of the time I have to force myself to go to work (R)
9.	I am satisfied with my job for the time being (Used in six-item version)
10.	I feel that my job is no more interesting than others I could get (R)
11.	I definitely dislike my job (R)
12.	I feel that I am happier in my work than most other people
13.	Most days I am enthusiastic about my work (Used in six-item version)
14.	Each day of work seems like it will never end (R)
15.	I like my job better than the average worker does (Used in six-item version)
16.	My job is pretty uninteresting (R)
17.	I fiend real enjoyment in my work (Used in six-item version)
18.	I am disappointed I ever took this job (R)

Table 4.4: The complete Brayfield & Rothe job satisfaction scale [Source: Fields (2002)]

1.	I find real enjoyment in my job
2.	I like my job better than the average person
3.	I am seldom bored with my job
4.	I would not consider taking another kind of job
5.	Most days I am enthusiastic about my job
6.	I feel fairly satisfied with my job

Table 4.5: Shortened Brayfield & Rothe job satisfaction scale
[Source: Agho *et al.* (1992)]

agree–disagree scale for each item, item–scale correlations, content redundancy, and the desire to include both positively and negatively keyed items."
(Meyer & Allen, 1997, p.117).

As noted in an earlier chapter, previous knowledge sharing research (van den Hooff & de Leeuw van Weenen, 2004; van den Hooff & de Ridder, 2004) has limited itself to affective commitment, with researchers apparently of the opinion expresses by van den Hooff & de Ridder (2004, p.119) that since "affective commitment is positively related to individuals' willingness to commit extra effort to their work, [it is] the kind of commitment that can be expected to be related to willingness to donate and receive knowledge". As such, only affective organizational commitment — and neither continuance nor normative organizational continuance — is investigated in this study. Furthermore, Meyer & Allen (1991)'s affective organizational commitment scale is preferred in this study because while both it and the earlier scale developed by Porter *et al.* (1974) measure affective organizational commitment, it is the shorter of the two; this is an important consideration for — as pointed out earlier — in a study that measures not just organizational commitment but three other constructs as well, the length of a measuring instrument can negatively affect the questionnaire response rate. Meyer and Allen's affective organizational commitment is shown in Table 4.6 on page 89, where R indicates reverse worded items; note also that some of the items have been modified slightly to make them relevant for school environments.

1.	I would be very happy to spend the rest of my teaching career in this school
2.	I enjoy discussing my school with people outside it
3.	I really feel as if this school's problems are my own
4.	I think I could become as easily attached to another school as I am to this one (R)
5.	I do not fee like "part of the family" at my school (R)
6.	I do not feel "emotionally attached" to this school (R)
7.	This school has a great deal of personal meaning for me
8.	I do not feel a strong sense of belonging to my school (R)

Table 4.6: Modified Meyer & Allen (1991) affective organizational commitment scale items

4.5   Research setting and sample selection

In quantitative research that seeks to generalise findings from a sample to the population from which the sample was initially drawn, probabilistic sampling techniques are a prerequisite; non-probabilistic sampling techniques are susceptible to sampling bias, and therefore cannot be used to generalise from samples to populations. In reality, however, it will not always be possible to draw random samples; such is the case in the current study where time and financial resources are, as in many a research study, a limiting factor. Though non-random sampling techniques preclude generalization to specific populations, useful conclusions can still be drawn about the nature of relationships among the variables considered. For instance, for his doctoral research undertaken at the University of Michigan, Malete (2000) did not randomly select his study participants, but merely included "an accessible population of students that was [deemed] representative of urban and rural Botswana youths" (p.18). Similarly, Laka-Mathebula (2004), whose doctoral research was undertaken at the University of Pretoria, did not use random sampling. In both these cases, however, important conclusions were drawn about the nature of the relationships among the variables investigated.

The current study specifically targeted teachers in senior secondary schools in Botswana i.e. those that offer the last two years of Botswana's five year secondary education, thereby preparing students for the Botswana General Certificate of Secondary Education examinations. There are 27 such schools in Botswana, scattered around the country. A primary concern of research in the social sciences is the issue of questionnaire response rates which are often extremely low. In a bid to bolster return rates, this study only focused in the nine schools in and around Gaborone; these schools, together with their estimated distance from the University of Botswana main campus where the researcher was based, are given in Table .

4.6   Data collection procedures

In an endeavour to use measuring instruments whose validity and reliability is well documented in the extant literature, each of the constructs investigated

	School	Town	Distance (km)
1.	Gaborone Senior Secondary School	Gaborone	3
2.	Ledumang Senior Scondary School	Gaborone	8
3.	Naledi Senior Secondary School	Gaborone	6
4.	St. Joseph's College	Gaborone	15
5.	Kagiso Senior Secondary School	Ramotswa	30
6.	Moeding College	Otse	65
7.	Lobatse Senior Secondary School	Lobatse	75
8.	Kgari Sechele II Senior Secondary School	Molepolole	60
9.	Molefi Senior Secondary School	Mochudi	50

Table 4.7: Targeted senior secondary schools in and around Gaborone

in this study was measured using a pre-existing instrument. However, where appropriate, the wording of the instrument was amended to ensure relevance; for instance, in the organizational commitment scale, the word 'organization' was changed to 'school' to make the instrument more relevant. Also, the instruments were selected not just for the psychometric properties, but also for their relevance, such as the use of DiPaola's Individual Citizenship Behaviour scale. Furthermore, each instrument was carefully considered to ensure that all items were relevant, and those deemed irrelevant dropped (see the section on measuring instruments earlier in this chapter). A copy of the complete questionnaire, including the covering letter, is attached as Appendix B.

The questionnaire used in this study was piloted at a junior secondary school in Tlokweng in the outskirts of Gaborone. The initial intention was to do the pilot study at private secondary schools in Gaborone. However, it was feared that such schools would be significantly different from those being targeted in the main study; firstly, being private schools, their culture would likely significantly differ from the culture in government owned schools, which in turn would influence perceptions of, and expectations regarding, the four variables investigated in this thesis. Secondly, the level of education for teachers in the private schools, which routinely hire Master's degree holders, would be higher than that in government schools, where the majority of teachers are likely to be first de-

gree holders. Thirdly, the private schools tend to be more multicultural, which may be an important consideration as national and organizational cultures may potentially influence the variables in the current study. Junior secondary schools are more likely to be similar to senior secondary schools in culture as they both are government owned, and also mainly employ Botswana citizens. The level of education for junior school teachers will generally be a Diploma, implying that if junior secondary school teachers understand the instruments used in this study, then so too should senior secondary school teachers whose level of education will generally be first degree level.

In order to undertake the study, permission had to be sought from a number of authorities. First, it was necessary to get Botswana government approval, and because schools fall under the Ministry of Education, permission was sought from the Permanent Secretary in the said ministry. Schools in Botswana are divided into a number of regions. The schools identified for inclusion in this study fall with the South–Central region. Thus, having obtained the overall research permit from the ministry, it was then necessary to seek permission from the Chief Education Officer, South–Central. With this permit duly obtained, individual school heads could then be approached to seek their permission to approach teachers in their school to participate in the study. Finally, each questionnaire had a covering letter requesting individual teachers to participate in the study, and also highlighting the fact that their participation was voluntary, and that they could pull out of the study any time they wished, but emphasizing that their participation would be highly appreciated. The letters seeking permission from the various gatekeepers are attached as Appendix A.

It had initially been intended that at each school, a staff meeting would be arranged during which the study would be introduced, and the respondents asked to fill in the questionnaire. However, this was only possible at one school. At all the other schools, the head teachers preferred that the questionnaires be left with a contact person in the school, who would then distribute and collect the questionnaires on behalf of the researcher. In general, the school heads felt that an outsider distributing and collecting questionnaires in their schools would be too disruptive for their liking. Although these sentiments were unanticipated, they were entirely understandable; schools tend to be over-researched, with some

indicating that they receive a questionnaire every fortnight! Indeed, when this researcher arrived to seek permission to undertake the study at one of the schools, teachers were in the process of completing another questionnaire from a different researcher. At another school, the school head was openly negative, insisting that "questionnaire–based research was entirely without merit, because it could never — like engineering–type research — yield tangible products". Although questionnaires were distributed to teachers in both of these schools, none were ever returned. At another school, less that ten teachers completed and returned the questionnaires, and so the school was excluded from the study.

As mentioned above, in one school it was possible to distribute questionnaires in a staff meeting, and collect the completed questionnaires immediately afterwards. In most of the schools where the school head had given permission for teachers to be approached for possible inclusion in the study, one teacher was chosen to act as the contact person. A small monetary reward was offered to the contact persons to encourage them to collect as much data as possible. However, this does not appear to have helped; the highest return rates were recorded by schools where the contact persons were uncomfortable with being given a reward, and ultimately only accepted it after much persuasion.

4.7 Procedures for data analysis

4.7.1 Reliability and validy matters

When using measuring instruments to quantify latent constructs, it is imperative that the validity and reliability of such instruments be verified with specific reference to the sample considered in the study. Struwig & Stead (2001, p.130-138) define reliability and validity in the following manner:

> "*Reliability is the extent to which test scores are accurate, consistent, or stable . . . Validity refers to the extent to which a research design (e.g. pre-experimental, quasi-experimental, or experimental) is scientifically sound or appropriately conducted . . . The validity of a measuring instrument's score refers to the extent to which the instrument*

*measures what it is intended to measure. For example, if a test is
constructed to measure musical ability but actually measures interest
in music, then its scores have no validity for musical ability".*

While there are many approaches to measuring reliability (e.g. test-retest
reliability, parallel-forms reliability, split-half reliability), the most appropriate
approach for the current study would be to measure the internal consistency
of the measuring instruments. Internal consistency indices, such as Cronbach's
alpha and the Kuder-Richardson formula, quantify "the extent to which the test
items all reflect the same attribute ... [i.e.] Internal consistency comprises the
average correlation among the items and the length of the test" (Struwig & Stead,
2001, p.132). A particular advantage of using these indices is that the study
participants need only complete the instrument once, reducing the burden placed
by the researcher on the participants. Since the instruments used in this study
employ Likert-type items, Cronbach's alpha was the appropriate index to use to
measure the instruments' internal consistency.

It is interesting to note that Struwig & Stead (2001) distinguishes between
validity at the level of the research design and validity at the level of the instru-
ment. The former is concerned with ensuring that the various parts of a given
research project all fit together nicely since " ...we can have little confidence in
the answers put forward to research questions on the basis of a design and meth-
ods which do not fit the questions: the argument behind the research falls down"
(Punch, 2005). The present chapter, in its entirety, can be seen as addressing
issues of validity of the research design.

Researchers also sometimes distinguish between internal validity — which is
concerned with the study's research design — and external validity — which fo-
cuses on the generalizability of the study findings (Punch, 2005). At the construct
level, validity is concerned with the degree to which indicator items manifested
on a particular test measure the underlying unobservable construct that they
purport to tap. Exploratory and confirmatory factor analysis are often used to
measure construct validity; the current study uses exploratory factor analysis
where appropriate.

4.7.2   Hypothesis testing

The hypotheses formulated in this study were tested as follows:

4.7.2.1   Hypothesis 1

Hypothesis 1 posits a positive correlation between knowledge sharing behaviour and organizational citizenship behaviour; the Pearson correlation coefficient was used to quantify this relationship.

4.7.2.2   Hypotheses 2 and 3

Hypotheses 2 and 3 suggest that job satisfaction and organizational commitment influence organizational citizenship behaviour; multiple linear regression was used to test these relationships.

4.7.2.3   Hypotheses 4 and 5

Hypotheses 4 and 5 suggest that job satisfaction and organizational commitment influence knowledge sharing behaviour; multiple linear regression was used to test these relationships.

4.7.2.4   Hypothesis 6

Hypothesis 6 posits a positive correlation between job satisfaction and organizational commitment; the Pearson correlation coefficient was used to quantify this relationship.

4.7.2.5   Hypothesis 7

Hypothesis 7 posits that a structural equation model can be built relating knowledge sharing behaviour, organizational citizenship behaviour, job satisfaction, and organizational commitment; a structural regression model was constructed, using the two-step rule (step 1 comprises a confirmatory factor analysis, while the path model was developed in step 2), as shown in Figure 4.2 on page 97. The model considered in the current study was just-identified.

4.7.2.6 Hypothesis 8

Hypothesis 8 focused on the relationship between demographic variables (i.e. age, gender, organizational tenure and occupational tenure) and each of the study variables (i.e. knowledge sharing behaviour, organizational citizenship behaviour, job satisfaction, and organizational commitment). Age, organizational tenure, and occupational tenure — all being numeric — were handled in the same manner: the Pearson correlation coefficient was used to quantify the relationships between each demographic variable and each study variable. Being categorical, gender was handled differently: for each study variable, the t-test was used to test the hypothesis that the mean scores for females was different from that of males.

4.7.3 Structural equation modelling

Schumacker & Lomax (2004) identify the following stages of the structural equation modelling process: (i) model specification, (ii) model identification, (iii) model estimation, (iv) model testing, and (v) model modification. Similar stages are identified by Kline (2005): (i) specify the model, (ii) determine whether the model is identified, (iii) select measures, (iv) estimate the model, (v) respecify the model, and (vi) report the analysis.

Model specification refers to the process of defining the relationships among the constructs being investigated. Often this is done diagrammatically using an appropriate structural equation modelling software package; in the current study, the software package used was EQS, developed by Professor Peter Bentley of the University of California, Los Angeles. Model specification is theory based i.e. the relationships among the constructs under study are derived from theory as gleaned from the extant literature. As Schumacker & Lomax (2004, p.62) explain, model specification "involves using all of the available relevant theory, research, and information and developing a theoretical model ... In other words, available theory is used to decide which variables to include in the theoretical model (which implicitly also involves which variables not to include in the model) and how these variables are related". The aim is to produce a parsimonious model (i.e. one that does not include too many variables) that has strong explanatory and predictive utility.
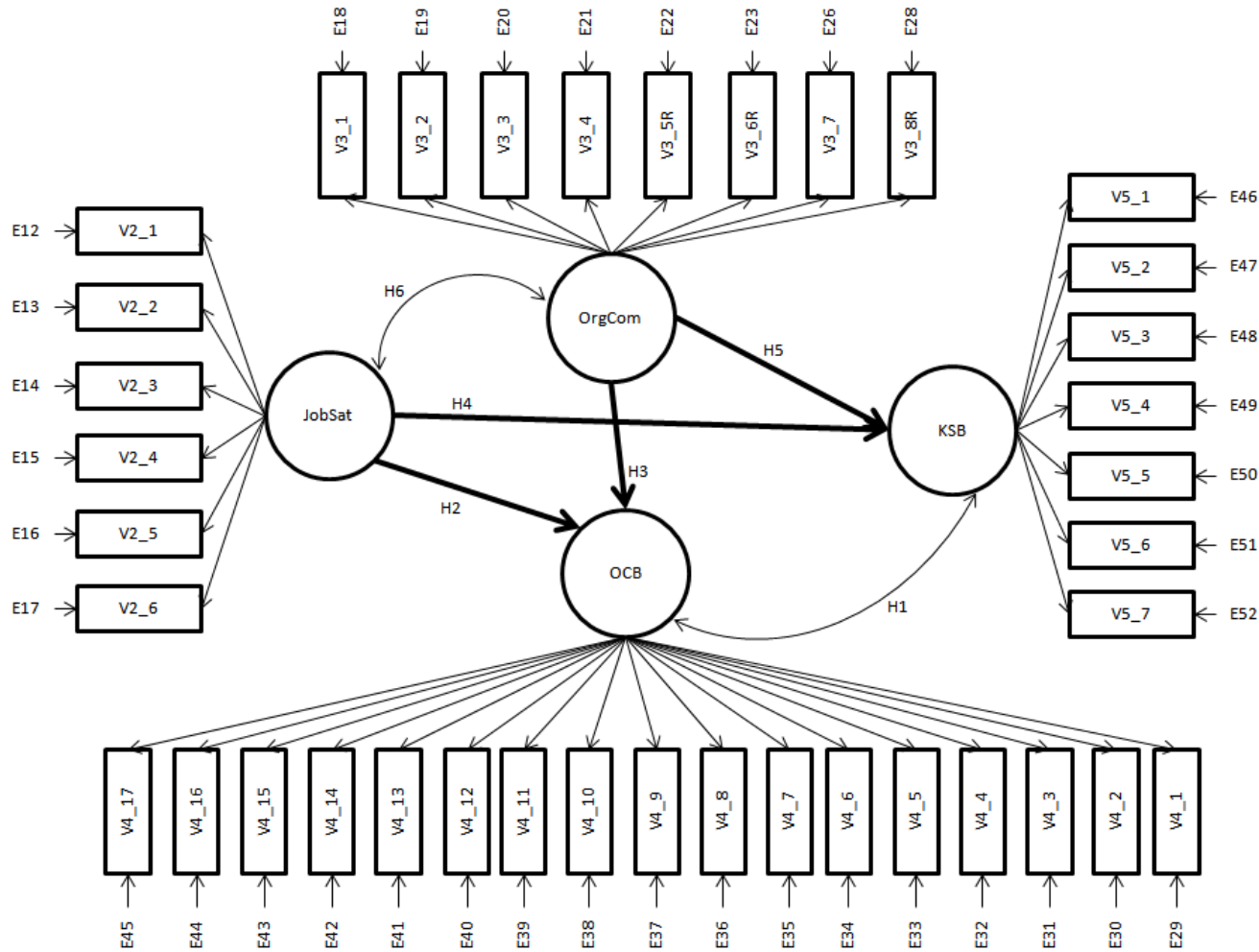
Figure 4.2: Structural regression model linking job satisfaction (JobSat), organizational commitment (OrgCom), organizational citizenship behaviour (OCB), and knowledge sharing behaviour (KSB)

Once the model is specified, it is important to determine whether it is identified. To say that a model is identified is to say that it is theoretically possible to derive a unique estimate of every model parameter (Kline, 2005). There are three levels of model identification (Schumacker & Lomax, 2004, p.64) (i) a model may be under-identified, in which case one or more parameters may not be uniquely identified because of lack of sufficient information to do so; (ii) a model may be just-identified in which case there is just enough information to uniquely determine all the model parameters; and (iii) a model may be overidentified when there is more than one way to identify one or more parameters of the model. The model considered in the current study was just-identified.

Model estimation follows model specification. Schumacker & Lomax (2004, p.66) capture the essence of model estimation with the following words:

> *"We want to obtain estimates for each of the parameters specified in the model that produce the implied matrix Σ, such that the parameter values yield a matrix as close as possible to S, our sample covariance matrix of the observed or indicator variables. When elements in the matrix Σ equal zero $(S - \Sigma = 0)$, then $\chi^2 = 0$, that is, one has a perfect model fit to the data."*

Model estimation yields parameter estimates for the particular model being considered. It is then incumbent upon the researcher to determine how well the model is supported by the data; this, then, is the focus of model testing. Various criteria can be used to assess model fit, with some taking an omnibus approach (i.e. testing global fit of the data to the model), and other concerning themselves with specific model parameters. Table 4.8, on page 99, lists a number of model fit criteria, including the following: Chi-square, Goodness-of-fit (GFI), Adjusted GFI, Root-mean-square residual (RMR), Root-mean-square error of approximation (RMSEA), Tucker-Lewis index, Normed fit index, Normed chi-square, Parsimonious fit index, and Akaike information criterion. Where the researcher is not satisfied with the model fit, the model can be re-specified, and the estimation and testing phases undertaken for the new model.

Model fit criterion	Acceptable level	Interpretation
Chi-square	Tabulated χ^2 value	Compares obtained χ^2 value with tabulated value for given df
Goodness-of-fit (GFI)	0 (not fit) to 1 (perfect fit)	Value close to 0.95 reflects a good fit
Adjusted GFI (AGFI)	0 (not fit) to 1 (perfect fit)	Value adjusted for df, with 0.95 a good model fit
Root-mean-square residual (RMR)	Researcher defines level	Indicates the closeness of Σ to S matrix
Root-mean-square error of approximation (RMSEA)	< 0.05	Value less than 0.05 indicates a good model fit
Tucker-Lewis index	0 (not fit) to 1 (perfect fit)	Value close to 0.95 reflects a good fit
Normed fit index	0 (not fit) to 1 (perfect fit)	Value close to 0.95 reflects a good fit
Normed chi-square	$1.0 - 5.0$	Less than 1.0 is a poor model fit; more than 5.0 reflects a need for improvement
Parsimonious fit index	0 (not fit) to 1 (perfect fit)	Compares values in alternative models
Akaike information criterion	0 (perfect fit) to negative value (poor fit)	Compares values in alternative models

Table 4.8: Model fit criteria and acceptable fit interpretation [Source: Schumacker & Lomax (2004, p.82)

A structural regression model was used to assess the model suggested by the conceptual framework guiding this study. As Kline (2005) notes, path analysis estimates presumed causal relations among variables. Knowledge sharing behaviour, organizational citizenship behaviour, job satisfaction, and organizational commitment are latent constructs. However, for the sample considered in this study, through item analysis — reported in the next chapter — each of these constructs was found to be unidimensional; confirmatory factor analysis was used to verify this unidimensionality. When a construct is unidimensional, the technique of parceling can be used to reduce the construct to a single indicator that can then be used in path analysis. Kline (2005, p.197) defines a **parcel** as a "total score (linear composite) across a set of homogenous items (i.e. it is a miniscale)". According to Kline, parcels, which are treated as continuous indicators, tend to have a higher score reliability than individual items.

4.8   Conclusions

This chapter presented the research design according to which this study was executed. In particular, the chapter discussed the four components of a research design as identified by Punch (2005): the research strategy, the conceptual framework, the units of analysis, and the data analysis techniques to be employed. The study is a correlation, also known as analytic, survey in which the individual teacher forms the unit of analysis. A conceptual framework linking knowledge sharing behaviour, organizational citizenship behaviour, job satisfaction and organizational commitment was developed. This framework was then used to develop hypotheses that will help answer the research questions posed in Chapter 1. This chapter also identified the instruments that were used to measure each of the variables in the study, as well as the procedures for data collection and analysis. In the next chapter, the discussion focuses on the results of the data analysis.

Chapter 5

Data analysis

5.1 Introduction

This thesis investigates the relationships among knowledge sharing behaviour, organizational citizenship behaviour, job satisfaction, and organizational commitment. Chapters 2 and 3 reviewed the empirical literature pertaining to these constructs while Chapter 4 discussed the research design guiding the study. This chapter presents the results of the empirical component of this study. First, a description of the sample is provided, covering the respondents' distribution by school, gender, age, occupational tenure and organizational tenure. The chapter then discusses the psychometric properties of the measuring instruments used in the study as measured using Cronbach's coefficient alpha and — where appropriate — using factor analysis. The results of hypotheses testing are then presented.

5.2 Sample description

5.2.1 Respondent distribution by school

Respondents were drawn from senior secondary schools in and around Gaborone. Table 5.1 on the next page shows the distribution of the respondents by school. As the table shows, school SCH03 yielded the largest number of respondents, while the smallest number of respondents came from school SCH02. As Table

School	Respondents	% school yield	yield as % of total
SCH03	74	61.7	26.1
SCH05	55	45.8	19.4
SCH01	55	45.8	19.4
SCH06	52	43.3	18.4
SCH04	26	21.2	9.2
SCH02	21	17.5	7.4

Table 5.1: Respondent distribution by school

5.1 further shows, the response rate varied widely per school, with school SCH03 yielding a response rate of roughly 62% compared to the 17.5% yielded by school SCH02. Overall, though, the response rate was 39%, which when compared with other similar studies — such as Laka-Mathebula's 2004 response rate of 28% — was deemed acceptable.

5.2.2 Respondent distribution by gender

Respondents were asked to provide the following demographic details: gender, age, organizational tenure, and occupational tenure. Out of 283 returned questionnaires, 147 (52%) were from female teachers, while 133 (47%) were from males; 3 (1%) did not mention their gender, presumably because they were uncomfortable to do so, or did not see what its bearing would be on the study. Looking at these figures, it can be seen that the sample was fairly well balanced in terms of gender. The pie chart in Figure 5.1 on the following page helps accentuate this balance.

5.2.3 Respondent distribution by age

The descriptive statistics for age are shown in Table 5.2 on page 104. Teacher age ranged from a minimum of 21 years to a maximum of 63 years, which is a range of 42 years. The mean age was 37.3 years, with a standard deviation of 7.3. The distribution is positively skewed, indicating that the majority of scores fall
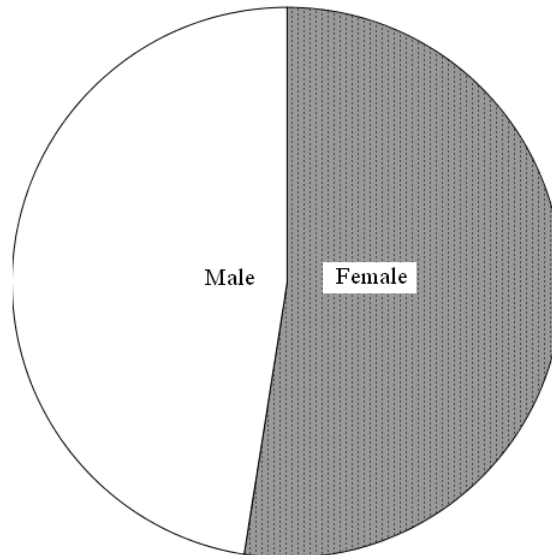
Figure 5.1: Respondent distribution by gender

on the low end of the distribution i.e. teachers in the sample under consideration are generally young.

The box–and–whisker plot in Figure 5.2 on page 105 provides another way of looking at the age distribution. Worth noting is the fact that two data points, namely respondents 63 and 256, aged 58 and 63 respectively are considered outliers. The first quartile lies at 32 years, indicating that 25% of the teachers in this sample are no older than 32 years old. Similarly, the second quartile lies at 36 years, indicating that 50% of the teachers are no older than 36 years old while the third quartile indicates that 75% are no more than 42 years. Thus, in general teachers in this sample are relatively young.

5.2.4 Respondent distribution by occupational tenure

As Table 5.3 on page 106 indicates, occupational tenure ranged from a month to 42 years, with a mean of 12.04 years and a standard deviation of 7.5. As can be seen from the table, 25% of the people in this sample have been teaching for no more than 7 years, 50% have been teaching for no more than 10 years, and 75% for no more than 17 years. The box–and–whisker plot in Figure 5.3 on page 107

N	Valid	272.0000
	Missing	11.0000
Mean		37.2647
Median		36.0000
Mode		33.0000
Std. Deviation		7.2684
Skewness		0.5248
Std. Error of Skewness		0.1477
Kurtosis		0.2325
Std. Error of Kurtosis		0.2944
Range		42.0000
Minimum		21.0000
Maximum		63.0000
Percentiles	25	32.0000
	50	36.0000
	75	42.0000

Table 5.2: Respondent distribution by age
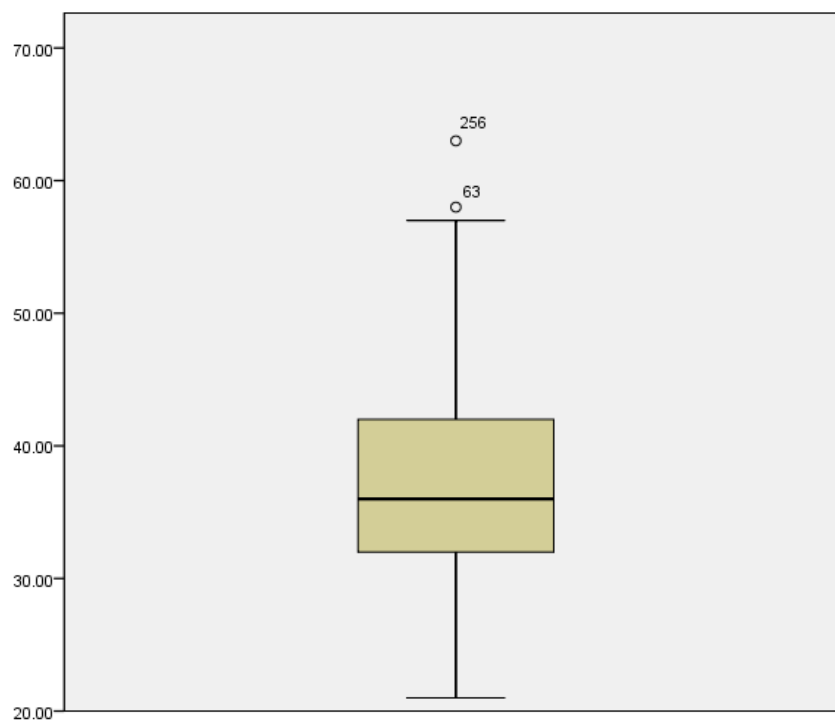
Figure 5.2: Respondent distribution by age

N	Valid	273.0000
	Missing	10.0000
Mean		12.0362
Median		10.0000
Mode		7.0000
Std. Deviation		7.4707
Skewness		0.8245
Std. Error of Skewness		0.1474
Kurtosis		0.6691
Std. Error of Kurtosis		0.2938
Range		41.9167
Minimum		0.0833
Maximum		42.0000
Percentiles	25	7.0000
	50	10.0000
	75	17.0000

Table 5.3: Respondent distribution by occupational tenure

indicates that respondents 165, 63, and 256, with occupational tenure of 35, 36, and 42 years respectively, maybe be considered outliers. Given the youthfulness of the sample as indicated by the age distribution (see previous section), it is not surprising that in general the individuals in this sample have been teaching for a relatively short period of time.

5.2.5   Respondent distribution by organizational tenure

The descriptive statistics for organizational tenure are summarised in Table 5.4 on page 108 as well as in the box–and–whisker plot in Figure 5.4 on page 109. Organizational tenure ranged from a minimum of a month to a maximum of 19 years. In general, though, teachers have not been at their schools for very long: some 50% have only been at their current school for 3 years or less, while 75% have only been at their current school for 6 years or less, and only 25% have been
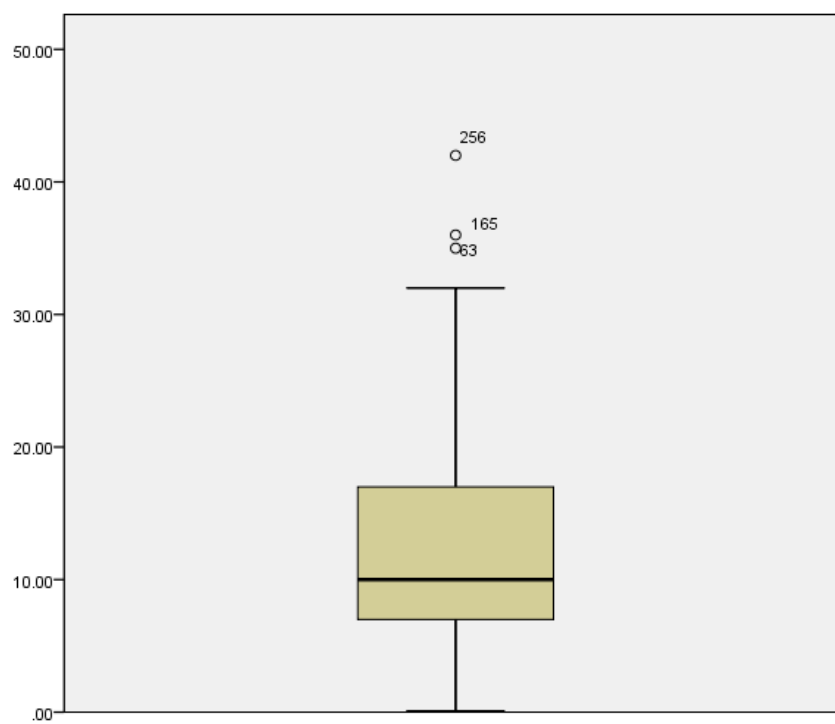
Figure 5.3: Respondent distribution by occupational tenure

N	Valid	270.0000
	Missing	13.0000
Mean		3.9319
Median		3.0000
Mode		3.0000
Std. Deviation		3.6713
Skewness		1.1882
Std. Error of Skewness		0.1483
Kurtosis		1.4536
Std. Error of Kurtosis		0.2954
Range		1809167
Minimum		0.0833
Maximum		19.0000
Percentiles	25	0.5625
	50	3.0000
	75	6.0000

Table 5.4: Respondent distribution by organizational tenure

at their current school for more than 6 years. On average, teachers have been at their current school for 3.9 years, with a standard deviation of 3.67 years. As Figure 5.4 on the next page indicates, a number of teachers may be considered outliers: these are respondents 165, 193, 184, 194, and 195, who have been at their schools for 15.5, 16, 16, 17, and 19 years, respectively.

5.3 Scale properties

5.3.1 Knowledge sharing behaviour

The knowledge sharing behaviour scale used in this study consisted of 15 items (see section 5 of the study questionnaire in Appendix B). Seven of the items came from the instrument developed by Lin (2007b), and were intended to measure both knowledge donating and knowledge collecting; the other eight were only included
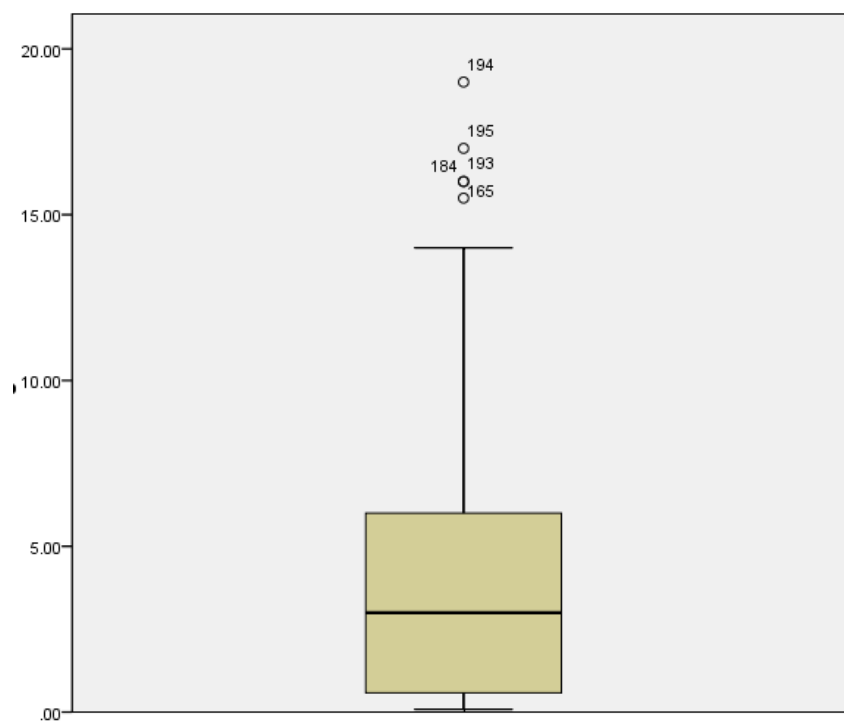
Figure 5.4: Respondent distribution by organizational tenure

to develop an insight into the kind of knowledge and information the respondents shared, if indeed any sharing did occur. Cronbach's coefficient alpha including all 15 items was high (0.90), and all items were strongly positively correlated with the scale total, suggesting that all items measured the same thing. On their own, the additional eight items (i.e. those that are not part of Lin (2007b)'s scale) yielded a Cronbach's coefficient alpha of 0.88.

Item analysis with only the seven items in the original scale yielded a coefficient alpha of 0.82, with all the items strongly positively correlated with the scale total. The first three items were intended to measure knowledge donating, while the last four were supposed to measure knowledge collecting. The knowledge donating items on their own yielded a Cronbach's coefficient alpha of 0.70, while the knowledge collecting items on their own yield a Cronbach's coefficient alpha of 0.87. However, principal axis factoring with both the *Eigenvalue* > 1 rule and inspection of the scree plot revealed that the seven–item scale was, for the sample under consideration, unidimensional, explaining 76% of the variance in the data.

The reason for the unidimensionality of the scale might be that the differences in the items were too subtle for the respondents to notice: in particular, the use of the word *share* might have been construed as suggesting a bidirectional, rather than unidirectional, flow of knowledge and information, thus nullifying the distinction between knowledge donating and knowledge collecting. Since the other eight items were added to the scale only to develop an insight into what knowledge and information was being shared, they were dropped from further statistical analysis. Further statistical analysis was thus based on the seven–item unidimensional knowledge sharing scale with a coefficient alpha of 0.82. The possibility of knowledge sharing behaviour comprising of two dimensions are further explored in the multivariate approach followed in the structural equation model.

5.3.2 Organizational citizenship behaviour

When the organizational citizenship behaviour scale (see section 4 of the study questionnaire in Appendix B) was subjected to item analysis the following became apparent. Firstly, item 7 negatively correlated with the rest of the scale items,

suggesting that it was measuring something else not being measured by the other items. The item read *I take things as they come in school without complaining*, and might have been measuring a general personality trait i.e. "whatever situation I am in, be it at home, at work, among friends or foes, I take things as they come without complaining".

Secondly, item 15 appears to be reverse worded, especially when read in conjunction with all the other items. Nevertheless, even reversing it gives a rather low correlation: the problem here might be that some people read it as being reverse–worded, while others did not, so that in the end it did not measure anything. Hence, dropping it would improve Cronbach's coefficient alpha substantially.

Thirdly, item 16 gave a rather low correlation figure, and dropping it would improve coefficient alpha substantially. This item differs from the other items in that it asks what the respondent thinks about his or her colleagues, while all the other items are about the respondent him– or herself. The item read: *Too many of my colleagues don't take responsibility for their actions and decisions.*

Given the foregoing, it was decided that items 7, 15, and 16 be dropped from the organizational citizenship behaviour scale. For the remaining items, principal axis factoring with both the *Eigenvalue* > 1 rule and the scree test revealed that the scale was unidimensional, and explained 72% of the variance in the data: this scale was used in the ensuing statistical testing of the various hypotheses. The scale had a high Cronbach coefficient alpha of 0.86.

5.3.3 Job Satisfaction

As indicated in Chapter 4, job satisfaction was measured with a six–item scale obtained from Agho *et al.* (1992); all the scale items are listed in section 2 of the study questionnaire in Appendix B. Item analysis indicated that dropping item 4 from the job satisfaction scale would improve Cronbach coefficient alpha from 0.77 to 0.79, while dropping item 3 would improve it to 0.81. The literature (Pett *et al.*, 2003) suggests that where results indicate that dropping an item from a scale would significantly improve the scale's coefficient alpha, then consideration should be given to dropping such an item. Sometimes researchers — such as in the study by Laka-Mathebula (2004) — argue that when coefficient alpha is

reasonably high with the item retained, then in the case of an established scale, the item be retained. However, in some cases — such as is the case with the scale being considered here — the scale may have been shown to have good psychometric properties in contexts different from where it is now being used; in that case, it is probably better that the item be dropped if coefficient alpha would be significantly improved.

Item 3 in the job satisfaction scale read: *I am seldom bored with my job.* Because respondents were not mother tongue English speakers, it is possible that they might have been confused by the word 'seldom'. Item 4, on the other hand, included the word *not*: *I would not consider taking another kind of job.* Although this item was not reverse–worded, it differed from the other items, such as *I find real enjoyment in my job*, that did not include a negation. As such, respondents may have mistakenly misconstrued it as being reverse worded, and responded to it accordingly. Consequently, it was decided that both items 3 and 4 be dropped from the job satisfaction scale, leaving a four–item scale with a robust Cronbach coefficient alpha of 0.86.

5.3.4 Organizational commitment

When the organizational commitment scale (see section 2 of the study questionnaire in Appendix B) was subjected to item analysis, the results showed that item 4 in the scale pulled down Cronbach's coefficient alpha somewhat; dropping this item from the scale would raise coefficient alpha from 0.71 to 0.79. More significantly, this item exhibited a negative correlation (-0.18) with the rest of the scale items, suggesting that it was not measuring what the other items were measuring. The item read *I think I could easily become as attached to another school as I am to this one*, and might have been measuring a general personality characteristic i.e. "I am like that ... I get attached to schools, and it is not because of the school, that is the way I am". The item was reverse worded to begin with, and was coded as such in the initial analysis; however, even when treating it as 'not reverse worded', its correlation with the other scale items, at 0.18, remained very low. Item 4 was thus dropped from the organizational commitment scale.

Construct	N	Mean	Std. Dev.	Median
Job satisfaction	282	2.60106	0.65946	2.75000
Organizational commitment	283	2.64705	0.54925	2.71429
Organizational citizenship behaviour	282	3.04773	0.40477	3.03571
Knowledge sharing behaviour	282	3.08903	0.43267	3.00000

Table 5.5: Construct means

5.3.5 Levels of the study variables

Knowledge sharing behaviour, organizational citizenship behaviour, job satisfaction, and organizational commitment were all measured using four–item Likert type scales ranging from a low of 1 to a high of 4, with 1 and 4 indicating *strong disagreement* and *strong agreement*, respectively. In general, all four constructs scored above average, with the mean scores and their standard deviations as shown in Table 5.5. Scores were somewhat higher for organizational citizenship behaviour ($mean = 3.0$) and knowledge sharing behaviour ($mean = 3.1$) than for job satisfaction ($mean = 2.6$) and organizational commitment ($mean = 2.6$).

Eight items in the knowledge sharing instrument were intended to give an idea of the topics that were covered by knowledge sharing activities. Specifically, these items sought to measure both donating and collecting across five areas, namely, teaching profession, subject taught, administrative issues, and issues involving students. As Table 5.6 on the next page shows, both knowledge donating and knowledge collecting were quite high across all four areas, with the majority of respondents reporting scores of either 3 or 4.

5.4 Hypothesis testing

5.4.1 Knowledge sharing behaviour and organizational citizenship behaviour

Research question 1 sought to investigate the relationship between knowledge sharing behaviour and organizational citizenship behaviour. In particular it was

	Teaching Profession		Subjects Taught		Administrative Matters		Students	
	Donate	Collect	Donate	Collect	Donate	Collect	Donate	Collect
N Valid	279	278	273	271	280	277	273	274
Mean	3.2366	3.2986	3.0366	2.9742	3.0429	3.0433	2.8828	2.8942
Std. Deviation	0.55095	0.57699	0.65763	0.74242	0.60312	0.63554	0.64810	0.69517
Median	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000	3.0000
Mode	3.00	3.00	3.00	3.00	3.00	3.00	3.00	3.00

Table 5.6: Topics that knowledge is shared about

hypothesized that:

> *H1: Knowledge sharing behaviour and organizational citizenship behaviour are positively correlated.*

The Pearson product moment correlation coefficient was used to quantify the strength of the relationship between the summated scales of these two constructs. Franzblau (1958), cited in Laka-Mathebula (2004), suggested the following *rules of thumb* for interpreting correlations: r ranging from 0 to 0.20 may be regarded as indicating no or negligible correlation; r ranging from 0.20 to 0.40 may be regarded as indicating a low level of correlation; r ranging from 0.40 to 0.60 may be regarded as indicating a moderate degree of correlation; r ranging from 0.60 to 0.80 may be regarded as indicating a marked degree of correlation; and r ranging from 0.80 to 1.00 may be regarded as indicating a high correlation. However, these guidelines should be used with care for, as Spector (2003) points out, in organizational research it is not often that a correlation coefficient exceeds 0.50!

Table 5.7 on the following page is a description of the relationship between knowledge sharing behaviour and organizational citizenship behaviour for the sample considered in this study; in this table, TotORGCIT refers to total (i.e. summated) individual organizational citizenship behaviour and TotKS refers to total individual knowledge sharing behaviour. As the table shows, the Pearson correlation coefficient between these two variables was 0.20, with similar results when using Spearman's nonparametric correlation coefficient (see Table 5.8 on the next page). While Franzblau's 1958 *rules of thumb* would suggest that this correlation is negligible, Spector's 2003 observation that in organizational research correlations rarely exceed 0.50 imply that the correlation cannot be ignored, modest though it might be. Thus, the hypothesis that organizational citizenship behaviour and knowledge sharing behaviour are positively correlated was supported.

5.4.2 Job satisfaction, organizational commitment and organizational citizenship behaviour

Research questions 2 and 3 investigated the relationship between job satisfaction and organizational commitment on the one hand, and organizational citizenship

		TotORGCIT	TotKS
TotORGCIT	Pearson correlation	1	.199
	N	279	279

Table 5.7: Knowledeg sharing behaviour – organizational citizenship behaviour Pearson correlations

		TotORGCIT	TotKS
TotORGCIT	Correlation Coefficient	1.00	.219
	N	279	279

Table 5.8: Knowledge sharing behaviour – organizational citizenship behaviour Spearman rho correlations

behaviour on the other. Specifically, the following hypotheses were tested:

> *H2: Job satisfaction positively influences organizational citizenship behaviour.*
>
> *H3: Organizational commitment positively influences organizational citizenship behaviour.*

Multiple linear regression analysis was used to test these hypotheses, with organizational citizenship behaviour as the dependent variable and job satisfaction and organizational commitment as independent variables. As Table 5.9 (see page 117) shows, the multiple correlation coefficient R was 0.28, indicating that less than 10% of the variance of organizational citizenship behaviour is accounted for by the linear combination of job satisfaction and organizational commitment. This figure is rather low, suggesting that, for the sample investigated here, taken together, job satisfaction and organizational commitment do not significantly influence organizational citizenship behaviour.

It is important to note, however, that in this regression model, although job satisfaction is not a significant predictor of organizational citizenship behaviour at the 5% level ($p = 0.881$), the influence of organizational commitment on organizational citizenship behaviour is statistically significant ($p < 0.001$). To further

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Model Summary						
Model		R	R Square	Adjusted R	Sq. Std. Error of the Estimate	
1		.282	0.080	.073	5.485	

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	719.284	2	359.642	11.954	.000
	Residual	8303.447	276	30.085		
	Total	9022.732	278			

Coefficients						
Model		Unstd. Coefficients		Std. Coefficients	t	Sig
		B	Std. Error	Beta		
1	(Constant)	34.759	1.757	19.786	.000	
	TotJS	.021	.141	.010	.149	.881
	TotORGCOM	.414	.097	0.278	4.287	.000

Table 5.9: Job satisfaction and organizational commitment as predictors of organizational citizenship behaviour

R	R Square	Adjusted R Square	Std. Error of the estimate
0.282	0.080	0.076	5.475

Table 5.10: Organizational commitment as a predictor of organizational citizenship behaviour

explore the relationship between organizational commitment and organizational citizenship behaviour, job satisfaction was dropped from the regression model. As can be seen from Table 5.10, while both R and R-square remained unchanged at 0.282 and 0.80 respectively, the adjusted R-square improved from 0.073 to 0.076. Furthermore, both the unstandardized and standardized coefficient also improved, the former from 0.414 to 0.421, and the latter from 0.278 to 0.282.

These results indicate that although H2 was not supported H3 was supported: i.e. at least for the sample considered in the current study, job satisfaction and organizational citizenship behaviour appear to be unrelated, while organizational commitment positively influences organizational citizenship behaviour.

5.4.3 Job satisfaction, organizational commitment, and knowledge sharing behaviour

Research questions 4 and 5 sought to investigate the relationship between job satisfaction and organizational commitment on the one hand, and knowledge sharing behaviour on the other. The specific hypotheses that were tested were as follows:

> *H4: Job satisfaction positively influences knowledge sharing behaviour.*
> *H5: Organizational commitment positively influences knowledge sharing behaviour.*

Multiple linear regression analysis was used to test these hypotheses, with knowledge sharing behaviour as the dependent variable and job satisfaction and organizational commitment as independent variables; the results of the regression analysis are shown in Table 5.11, on page 119. The multiple correlation coefficient R was 0.105, indicating that approximately 1% of the variance of knowledge

Model Summary					
Model		R	R Square	Adjusted R	Sq. Std. Error of the Estimate
1		.105	0.011	.004	3.037
ANOVA					
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	28.550	2	14.275	1.547	.215
	Residual	2546.391	276	9.226		
	Total	2574.941	278			
Coefficients						
Model		Unstd. Coefficients		Std. Coefficients	t	Sig
		B	Std. Error	Beta		
1	(Constant)	19.956	0.973	20.513	.000	
	TotJS	.035	.078	.030	.444	.658
	TotORGCOM	.070	.054	0.088	1.315	.190

Table 5.11: Job satisfaction and organizational commitment as predictors of knowledge sharing behaviour

sharing behaviour is accounted for by the linear combination of job satisfaction and organizational commitment. This figure is very low, suggesting that, for the sample investigated here, job satisfaction and organizational commitment do not significantly influence knowledge sharing behaviour. Furthermore, neither of the two predictors was statistically significant at the 5% level.

Thus, hypotheses H4 and H5 were not supported i.e. job satisfaction and organizational commitment were not related to knowledge sharing behaviour.

5.4.4 Job satisfaction and organizational commitment

Research question 6 was concerned with the relationship between job satisfaction and organizational commitment. In particular it was hypothesised as follows:

H6: Job satisfaction and organizational commitment are positively correlated.

Pearson's correlation coefficient, r, was used to quantify the strength of the relationship between these two variables. The strength of the relationship between job satisfaction and organizational commit was $r = 0.45$, which according to Franzblau's 1958 *rules of thumb* alluded to above, is a moderate correlation. However, given that in organizational research correlations rarely exceed 0.50 (Spector, 2003), this correlation may be considered quite robust. Thus, hypothesis H6 was supported: for the sample considered in the current study, job satisfaction and organizational commitment were significantly positively correlated.

5.4.5 Structural equation modelling

Research question number 7 sought to find out whether a structural equation model could be built to link knowledge sharing behaviour, organizational citizenship behaviour, job satisfaction, and organizational commitment together. Specifically, it was hypothesised that:

H7: A structural equation model can be built relating knowledge sharing behaviour, organizational citizenship behaviour, job satisfaction, and organizational commitment.

Fit Indices	
Bentler-Bonett Normed Fit Index	0.769
Bentler-Bonett Non-Normed Fit Index	0.905
Comparative Fit Index (CFI)	0.910
Bollen's (IFI) Fit Index	0.911
Root mean-square error of approximation (RMSEA)	0.051
90% Confidence Interval of RMSEA	$(0.044, 0.057)$

Table 5.12: Robust Goodness of Fit Summary for Model 1

As indicated in Chapter 4, path analysis was used to build and test a model linking knowledge sharing behaviour, organizational citizenship behaviour, job satisfaction and organizational commitment. The structural regression model was constructed using the two-step rule.

The confirmatory factor analysis was executed during step 1. The hypothesized model is displayed in Figure 5.5 on the following page. All the indicators of the four factors were measured on a 4-point Likert-type scale, hence these manifest variables were specified as categorical in the EQS program, and robust estimators and corresponding robust fit indices were requested.

The Wald test evaluates whether a free parameter could possibly be zero in the population i.e. it is a test on the free parameters in the model. This test was included as a diagnostic for possible redundant indicators. According to the Wald test, item 3 of job satisfaction and items 7, 15, and 16 of organizational citizenship behaviour are redundant in the model; this is in agreement with the exploratory factor analysis and item analysis (Cronbach alpha) results.

The fit indices for the model using all the indicators are displayed in Table 5.12. Guidelines for the fit indices were discussed in Chapter 4 (c.f. Table 4.8). The above results were improved by dropping the redundant indicators identified by the Wald test, as can be seen from the results for model 2 in Table 5.13.

Even though item 4 of job satisfaction, and item 4 of organizational commitment were not statistically indicated as redundant, a confirmatory factor analysis was executed where these two items were also dropped from the model. This is
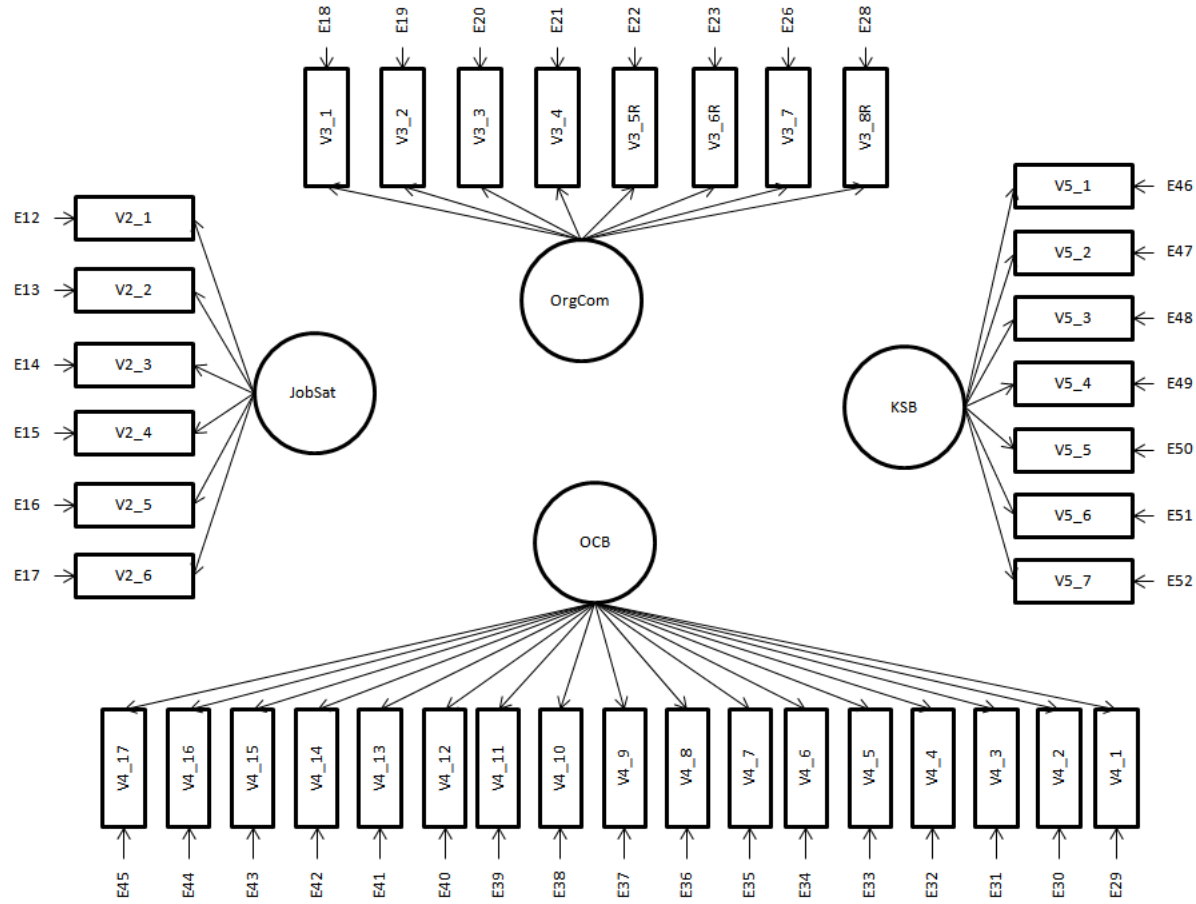
Figure 5.5: Confirmatory factor analysis model 1

Fit Indices	
Bentler-Bonett Normed Fit Index	0.804
Bentler-Bonett Non-Normed Fit Index	0.911
Comparative Fit Index (CFI)	0.916
Bollen's (IFI) Fit Index	0.917
Root mean-square error of approximation (RMSEA)	0.054
90% Confidence Interval of RMSEA	$(0.047, 0.061)$

Table 5.13: Robust Goodness of Fit Summary for Model 2

Fit Indices	
Bentler-Bonett Normed Fit Index	0.815
Bentler-Bonett Non-Normed Fit Index	0.919
Comparative Fit Index (CFI)	0.924
Bollen's (IFI) Fit Index	0.925
Root mean-square error of approximation (RMSEA)	0.052
90% Confidence Interval of RMSEA	$(0.045, 0.060)$

Table 5.14: Robust Goodness of Fit Summary for Model 3

in accordance with the results of the exploratory factor analysis and the reliability analysis, and supported by the relatively low loadings of these indicators in the previous confirmatory factor analysis models. The results of model 3, which corresponds with the items used to calculate the factors that were employed in the regression analyses and the correlation analysis, are displayed in Table 5.14. Based on the improved fit of model 3, and the theory and discussion from Chapter 4, it was decided that these items will be used as indicators for step 2 of the structural regression model (the path model).

The structural regression model as specified is overidentified. The model has 36 fixed parameters, 68 free parameters to be estimated and 528 data points (from the 32 indicators for the four factors), resulting in 460 degrees of freedom. The sample size is only 279, hence it was decided to run the path model separately from the confirmatory factor analysis, using parcels. Item parcels are often formed
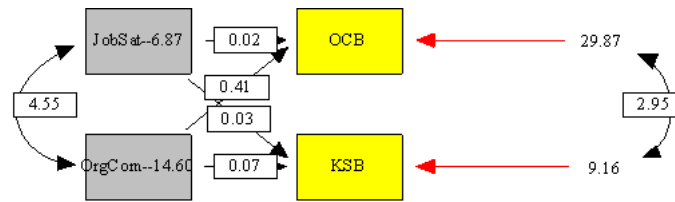
Figure 5.6: Four factor path model with parameter estimates
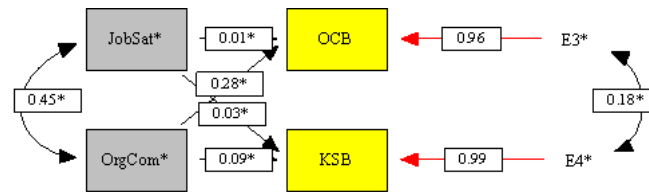
Figure 5.7: Four factor path model with standardized solution

to reduce the number of indicators of lengthy scales, such as for organizational citizenship behaviour. Furthermore, parcels have been shown to significantly improve the fit of the model, with a greater score reliability than that for the individual items, and less bias in estimates when items have a unidimensional structure (Kline, 2005). Parcels are treated as continuous indicators. For this model, the unidimensionality of the four factors is grounded in theory and has been verified. The parcels were constructed as a linear composite of the items comprising each factor.

Figures 5.6 and 5.7 respectively display the parameter estimates and the standardized solution of the four factor path model that has been analysed to assess the research hypotheses. This model is just-identified (with 10 data points and 10 free parameters to be estimated), hence the fit indices are irrelevant. Indeed, the path coefficients are identical to that of the regression analyses, as this is a saturated model. As was the case with the regression analyses, only the path coefficient from organizational commitment to organizational citizenship behaviour is statistically significant.

Lastly, the plausibility of the theoretically two-factor structure of knowledge sharing behaviour was investigated. Consequently, a five factor path model, as displayed in Figure 5.8, was analysed. This model is overidentified and has two
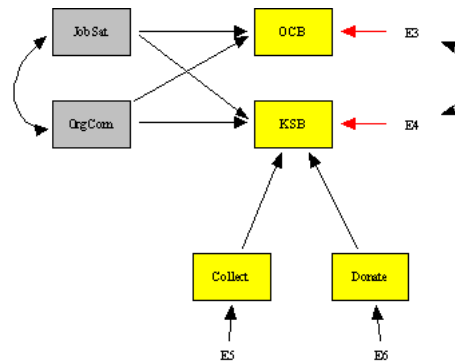
Figure 5.8: Five actor path model

degrees of freedom, hence allowing for the model to be rejected. The rationale
for this investigation was based on the theory relating to knowledge sharing be-
haviour, as discussed in Chapter 4, as well as on the results of the exploratory
factor analysis. The first dimension of the exploratory factor analysis on knowl-
edge sharing behaviour explains 76% of the variation. By including a second
dimension, as supported in the literature, a further 15% of the variation can be
explained, leaving only 9% of unexplained variability. A principal axis factor
analysis specifying two factors, followed by an oblique rotation, revealed that the
first factor represents the knowledge donating items and the second dimension
knowledge collecting items. The results of the five factor model is summarized in
Table 5.15.

The results were disappointing with poor fit indices and a large root mean
square error of approximation. However, inspection of the Lagrange Multiplier
test suggested that the correlation between the factors of knowledge sharing be-
haviur i.e. knowledge donating and knowledge sharing, be incorporated in the
model. The Lagrange Multiplier test is a test designed to evaluate the statistical
necessity of one or more restrictions on a model i.e. it evaluates whether parame-
ters should be added to the model. Modelling the relationship between knowledge
donating and knowledge sharing items can be substantiated by exploratory factor
analysis results which indicated that knowledge sharing is essentially unidimen-
sional. The model was hence respecified, with the results displayed in Table
5.16.
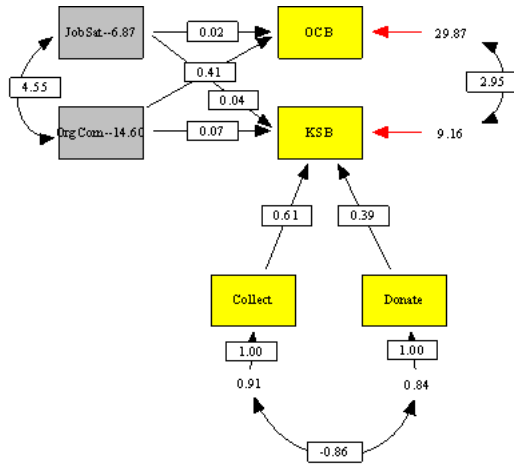
Figure 5.9: Five factor respecified path model with parameter estimates
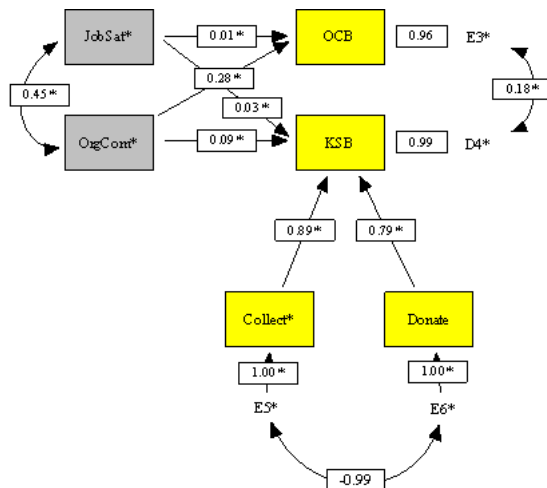
Figure 5.10: Five factor respecified path model with standardized solution

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Goodness of Fit Summary for Method = ROBUST	
Robust independence model $\chi^2 = 761.314$ on 16 degrees of freedom	
Independence AIC: 729.314	Independence CAIC: 655.215
Model AIC: 638.476	Model CAIC: 606.058
Satorra-Bentler scaled χ^2	652.4761 on 7 degrees of freedom
Probability value for the χ^2 statistic	.00000
Mean and variance-adjusted χ^2	295.241 on 3 degrees of freedom
Probability value for the χ^2statistic	.00000
Fit Indices	
Bentler-Bonnet Normed Fit Index	.143
Bentler-Bonnet Non-Normed Fit Index	$-.980$
Comparative Fit Index (CFI)	.134
Bollen's (IFI) Fit Index	.144
MacDonald's (MFI) Fit Index	.315
Root mean-square error of approximation (RMSEA)	.576
90% Confidence Interval of RMSEA	$(0.538, 0.612)$

Table 5.15: Robust Goodness of Fit Summary for the five factor model

Goodness of Fit Summary for Method = ROBUST	
Robust independence model $\chi^2 = 761.314$ on 16 degrees of freedom	
Independence AIC: 729.314	Independence CAIC: 655.215
Model AIC: -5.371	Model CAIC: -33.158
Satorra-Bentler scaled χ^2	6.6293 on 6 degrees of freedom
Probability value for the χ^2 statistic	.35649
Mean and variance-adjusted χ^2	4.732 on 4 degrees of freedom
Probability value for the χ^2 statistic	.31587
Fit Indices	
Bentler-Bonnet Normed Fit Index	.991
Bentler-Bonnet Non-Normed Fit Index	.998
Comparative Fit Index (CFI)	.999
Bollen's (IFI) Fit Index	.999
MacDonald's (MFI) Fit Index	.999
Root mean-square error of approximation (RMSEA)	.019
90% Confidence Interval of RMSEA	$(0.000, 0.082)$

Table 5.16: Robust Goodness of Fit Summary for the respecified five factor model

	JOBSAT	**ORGCOM**	**ORGCIT**	**KNOSHA**
Age	0.17 (272)	0.06 (272)	0.04 (271)	-0.07 (271)
Org. tenure	0.12 (270)	0.02 (270)	-0.05 (269)	-0.14 269)
Occ. tenure	0.17 (273)	0.06 (273)	-0.02 (272)	-0.04 (272)

Table 5.17: Correlations between demographic variables and the study variables

The model fit indices all show a remarkable improvement, while the root mean square error of approximation also decreases dramatically: all the statistics indicate that this model fits the data very well.

Figures 5.9 and 5.10 respectively display the parameter estimates and the standardized solution of the respecified five factor path model. Even though the relationship between knowledge sharing and knowledge donating has been modeled, the path coefficients relating to the research hypotheses remained unchanged, hence the conclusions drawn based on the previous models and the regression and correlation analyses are unaltered.

5.4.6 Demographic variables and other study variables

The last research question was concerned with the influence of the demographic variables (gender, age, organizational tenure, and occupational tenure) on each of job satisfaction, organizational commitment, organizational citizenship behaviour and knowledge sharing behaviour. Since age, organizational tenure, and occupational tenure were quantitatively measured, they are considered together below; afterwards, attention turns to gender, which is categorical, consisting of the levels 'male' and 'female'.

5.4.6.1 Age, organizational tenure, and occupational tenure

Pearson's correlation coefficient, r, was used to quantify the relationship between age, organizational tenure and occupational tenure and each of organizational commitment, job satisfaction, organizational citizenship behaviour and knowledge sharing behaviour.

As can be seen from Table 5.17 on the previous page, in general, the correlations were very low, with the highest being that between occupational tenure and job satisfaction ($r = 0.17$), and that between age and job satisfaction ($r = 0.17$). Following Franzblau's 1958 *rules of thumb* for interpreting correlations (see Section 5.4.1), the following observations can be made:

- *Age*: age and job satisfaction are positively correlated, but only weakly so. The correlations between age and the other variables are even lower: 0.06 for organizational commitment, 0.04 for organizational citizenship behaviour, and -0.07 for knowledge sharing behaviour. It would appear, therefore, that for the sample considered in this study, age is unrelated to each of organizational commitment, organizational citizenship behaviour, and knowledge sharing behaviour, and only weakly positively related to job satisfaction.

- *Organizational tenure*: Pearson's correlation coefficient between organizational tenure and organizational commitment is 0.02, while it is -0.05 for organizational tenure and organizational citizenship behaviour; both of these are so low as to be considered insignificant. The correlations are stronger for job satisfaction ($r = 0.12$) and knowledge sharing behaviour ($r = -0.14$). It is interesting to note that organizational tenure appears to be positively correlated with job satisfaction, but negatively correlated with knowledge sharing behaviour.

- *Occupational tenure*: occupational tenure is weakly positively correlated with job satisfaction ($r = 0.17$), with the correlations much lower for the other variables: 0.06 for organizational commitment, -0.02 for organizational citizenship behaviour, and -0.04 for knowledge sharing behaviour.

In summary, then, it would appear that job satisfaction is positively influenced by each of age, organizational tenure, and occupational tenure, while organizational tenure negatively influences knowledge sharing behaviour. The other relationships are insignificant.

5.4.6.2 Gender

The relationship between gender and job satisfaction was investigated as per the following procedure. First, the hypothesis that the job satisfaction scores for males and females exhibited the same variance was tested using the Levene F test for variability, also referred to as the assumption of homoscedacity:

$$H_0 : \sigma^2{}_M = \sigma_F{}^2$$

The results are shown in Table 5.18 on the following page. With a p–value of 0.04, it would appear that the job satisfaction variances for men and women are in fact not equal at the 5% level of significance. Thus, the means for males and females were compared on the bases of separate, rather than pooled, calculations of the t–test. The hypothesis tested here was the following:

$$H_0 : \mu_M = \mu_F$$

With a p–value of 0.03, this hypothesis was rejected at the $\alpha = 0.05$ level. Thus it would appear that the job satisfaction scores for males and females scored were, on average, significantly different. Indeed, looking at Table 5.18, it can be seen that the mean job satisfaction score for males was higher than for females. Since higher scores indicate stronger agreement with the items on the job satisfaction scale, it would appear that male teachers are, on average, more satisfied with their job than their female counterparts. It is important to remember though that only global job satisfaction was measured, so that it would not be possible to compare the job satisfaction scores for male and female teachers on specific facets of their jobs.

The relationship between gender and each of organizational commitment, organizational citizenship behaviour, and knowledge sharing behaviour was tested using the same procedure as when testing the relationship between gender and job satisfaction. For these constructs, however, the Levene test for variability suggested that there was no difference in the variance for males and females; furthermore, according to the t–tests, the means for males were not significantly different from the means for females. Thus on average, males and females scored similarly on organizational commitment, organizational citizenship behaviour, and knowledge sharing behaviour.

	Mean		Levene F	Pooled T	Separate T
	Male (n=133)	Female (n=147)			
JOBSAT	2.6923 ($\sigma = 0.6018$)	2.5243 ($\sigma = 0.7022$)	4.37 (p=0.0375)	2.14 (p=0.0334)	2.15 (p=0.0320)
ORGCOM	2.6689 ($\sigma = 0.5702$)	2.6384 ($\sigma = 0.5224$)	1.51 (p=0.2197)	0.47 (p=0.6407)	0.47 (p=0.6422)
ORGCIT	3.0532 ($\sigma = 0.4394$)	3.0458 ($\sigma = 0.3761$)	1.21 (p=0.2717)	0.15 (p=0.8787)	0.15 (p=0.8797)
KNOSHA	3.0617 ($\sigma = 0.4386$)	3.1144 ($\sigma = 0.4309$)	0.59 (p=0.4421)	-1.01 (p=0.3124)	-1.01 (p=0.3129)

Table 5.18: Relationships between gender and the study variables

5.5   Conclusions

This chapter presented the results of the empirical component of this study. First, a description of the sample was provided, covering the respondents distribution by school, gender, age, occupational tenure and organizational tenure. The chapter then discussed the psychometric properties of the measuring instruments used in the study as measured using Cronbach's coefficient alpha and — where appropriate — using factor analysis; the instruments used in this study displayed good psychometric properties.

As hypothesized, organizational citizenship behaviour and knowledge sharing behaviour were significantly positively correlated, as were job satisfaction and organizational commitment. Also as hypothesized, organizational commitment was found to be a statistically significant predictor of organizational citizenship behaviour. However, some of the study hypothesis were not supported: job satisfaction did not appear to influence either of organizational citizenship behaviour and knowledge sharing behaviour; organizational commitment, too, did not appear to influence knowledge sharing behaviour. With respect to demographic variables, age weakly positively correlated with job satisfaction; occupational tenure weakly positively correlated with job satisfaction, and weakly negatively correlated with knowledge sharing behaviour; and occupational tenure weakly positively correlated with job satisfaction.

This study also demonstrated the utility of the structural equation modeling approach — in the form of confirmatory factor analysis and structural regression analysis — to the investigation of the antecedents of organizational knowledge sharing behaviour, with the results of the structural regression analysis in agreement, as was to be expected, with those of the regression and correlation analysis.

The next chapter, Chapter 6, presents the study conclusions, highlights the implications for professional practice, and also identifies ways in which the research reported herein can be extended.

Chapter 6

Discussion, conclusions and recommendations

6.1 Introduction

This study draws from the organizational behaviour literature to explore factors influencing the knowledge sharing behaviour of individuals in organizational contexts. In particular, the study investigated the relationships among knowledge sharing behaviour, organizational citizenship behaviour, job satisfaction and organizational commitment. While Chapter 1 of this thesis introduced the research problem and its context, the literature review was spread over two chapters, with Chapter 2 focusing on the knowledge sharing literature, and Chapter 3 on organizational citizenship behaviour and its antecedents, job satisfaction and organizational commitment. Chapter 4 discussed issues of research design, and the data analysis was reported in Chapter 5. The empirical component of the study generated data from a sample consisting of teachers from senior secondary schools in the greater Gaborone area, in the Republic of Botswana. The current chapter presents the study conclusions, their implications for management, and also highlights ways in which further empirical work can extend the work reported in this thesis.

6.2 Restatement of the problem

The thesis of this study is that knowledge sharing behaviour is a kind of organizational citizenship behaviour. As such, the study posits that not only will knowledge sharing behaviour be positively correlated with organizational citizenship behaviour, but antecedents of organizational citizenship behaviour will also be antecedents of knowledge sharing behaviour. Job satisfaction and organizational commitment, in particular, have been found to be strong antecedents of organizational citizenship behaviour (Organ & Ryan, 1995; Podsakoff *et al.*, 2000). This study, then, empirically investigated the relationships among knowledge sharing behaviour, organizational citizenship behaviour, job satisfaction, and organizational commitment. Specifically, the study asked the following research questions:

1. What is the nature of the relationship between organizational citizenship behaviour and knowledge sharing behaviour?

2. How is job satisfaction related to organizational citizenship behaviour?

3. How is organizational commitment related to organizational citizenship behaviour?

4. How is job satisfaction related to knowledge sharing behaviour?

5. How is organizational commitment related to knowledge sharing behaviour?

6. How are job satisfaction and organizational commitment related?

7. Can a structural equation model be built relating knowledge sharing behaviour, organizational citizenship behaviour, job satisfaction, and organizational commitment?

8. Do demographic variables (age, gender, organizational tenure, and occupational tenure) influence knowledge sharing behaviour, organizational citizenship behaviour, job satisfaction, and organizational commitment?

6.3   Discussion of findings

6.3.1   General comments

The study sample consisted of a balanced sample of almost equal percentages of men and women. In general, the teachers surveyed were quite youthful, with an average age of 37 years. This augers well for the teaching profession as it would seem to suggest that there is a steady stream of young people — both male and female — joining the profession. Levels of job satisfaction and organizational commitment were fairly high, with the mean score for each being 65% (i.e. 2.6 out of a maximum of 4). Levels of organizational citizenship behaviour and knowledge sharing behaviour were even higher, with the mean for each of these two variables being slightly higher than 75% (i.e. 3 out of a maximum of 4). It can be concluded, therefore, that in general, teachers are satisfied with their jobs, are committed to their respective schools, and exhibit high levels of prosocial behaviour in the forms of organizational citizenship behaviours and knowledge sharing behaviour. In general, teachers indicated that they shared knowledge about the teaching profession in general, including information pertaining to subjects taught, information about students, and information relating to administrative matters.

6.3.2   Knowledge sharing behaviour and organizational citizenship behaviour

The first research question sought to investigate the relationship between knowledge sharing behaviour and organizational citizenship behaviour. In a real sense, this question is the crux of the current study: the study posits that knowledge sharing behaviour is a kind of organizational citizenship behaviour, and that the two should thus be correlated. The other two variables, job satisfaction and organizational commitment, were brought in to buttress the argument that knowledge sharing behaviour is a kind of organizational citizenship behaviour: if the hypothesis holds, then one would expect that predictors of organizational citizenship behaviour would also be predictors of knowledge sharing behaviour. As expected,

knowledge sharing behaviour and organizational citizenship behaviour were significantly positively correlated, although only moderately so ($r = 0.20$). Both the magnitude and direction of the correlation do suggest that the two are in fact related, though perhaps not to the extent that one could conclude that knowledge sharing behaviour is a subset of organizational citizenship behaviour. Thus, the study does suggest that organizational citizenship behaviour has a place in knowledge sharing behaviour; further research as suggested later in this chapter, would be necessary to explore this relationship further. It would seem, though, that within the school environment, there would be value in encouraging organizational citizenship behaviour in order to enhance — even if only moderately — knowledge sharing behaviour.

6.3.3 Job satisfaction, organizational commitment, and organizational citizenship behaviour

The second and third research questions focused on the relationships between job satisfaction and organizational commitment on the one hand, and organizational citizenship behaviour on the other. Specifically, it was hypothesized that both job satisfaction and organizational citizenship behaviour would strongly predict organizational citizenship behaviour. As it turned out, job satisfaction was not related to organizational citizenship behaviour; organizational commitment, however, did appear moderately related to organizational citizenship behaviour. These finding go against the conventional wisdom according to which "there is little question that the affective and cognitive components of job attitudes are related to [organizational citizenship behaviours]" (Penner *et al.*, 1997, pg.112). These results may be due to the generally high levels of both the predictor variables (job satisfaction and organizational commitment) and the outcome variable (organizational citizenship behaviour). Further research would be needed to clarify whether the results were just a fluke, or whether they generally hold among teachers — and other employees — in the Botswana context.

Other variables may also be moderating the relationships between the workplace attitudes investigated in this study — particularly job satisfaction — and organizational citizenship behaviour. According to Baron & Kenny (1986, pg.1174),

"in general terms, a moderator is a qualitative (e.g. sex, race, class) or quantitative (e.g. level of reward) variable that affects the direction and / or strength of the relation between an independent or predictor variable and a dependent or criterion variable". For instance, the study by Foote & Tang (2008) found team commitment to be a significant moderator of the relationship between job satisfaction and organizational citizenship behaviour: while job satisfaction and organizational citizenship behaviour were significantly related, the relationship was found to be stronger when team commitment was higher. Moderation may also have been at play in the current study: it is plausible that among the participants of the current study some other variable or variables not directly investigated in the study — such as organizational culture, social norms, and team (in this context, department) commitment — moderated the relationship between job satisfaction and organizational citizenship behaviour. This would help explain the apparent lack of relationship between job satisfaction and organizational citizenship behaviour. Furthermore, moderation may also account for the moderate, rather than robust, correlation between organizational commitment and organizational citizenship behaviour: indeed, Cohen (2006) detected a moderating effect of culture on the relationship between organizational commitment and organizational citizenship behaviour.

As they stand, though, the results would seem to suggest that there would be value in nurturing teacher organizational (i.e. school) commitment. However, teachers are employees, not so much of individual schools, but of the Department of Secondary Education, and as such they are frequently transferred from one school to another, sometimes even across 'school regions'. In such an environment, an otherwise good teacher who is committed to one school may suddenly become unproductive when transferred to another school. It would have been more desirable if job satisfaction, and not organizational commitment, was strongly related to organizational commitment. This line of reasoning underscores the need to further investigate the relationships between job satisfaction and organizational commitment on the one hand, and organizational citizenship behaviour on the other, among secondary school teachers in Botswana. Indeed, it would also be interesting to investigate the relationship between occupational — rather than organizational — commitment and the other variables in this study.

If occupational commitment were to be found to be related to knowledge sharing behaviour, then it would be safer to seek to manipulate it, rather than organizational commitment, because wherever teachers were transferred to then, barring the influence of other variables, they would still be in the same occupation to which they are committed.

6.3.4 Job satisfaction, organizational commitment, and knowledge sharing behaviour

The fourth and fifth research questions focused on the relationship between job satisfaction and organizational commitment on the one hand, and knowledge sharing behaviour on the other. Specifically, it was hypothesized that both job satisfaction and organizational commitment would strongly predict knowledge sharing behaviour. These hypotheses were predicated on the argument that knowledge sharing behaviour being a type of organizational citizenship behaviour, if job satisfaction and organizational commitment strongly predicted organizational citizenship behaviour (as the literature suggested), then they would also strongly predict knowledge sharing behaviour. As it turned out, both hypothesis H4 and hypothesis H5 were not supported: neither job satisfaction nor organizational commitment was related to knowledge sharing behaviour. Again, this may have been due to the generally high levels of both the predictor variables (job satisfaction and organizational commitment) and the outcome variable (knowledge sharing behaviour). Further research would be needed to help clarify the relationships between job satisfaction and organizational commitment on the one hand, and knowledge sharing behaviour on the other, among secondary school teachers in Botswana.

As in the case of the relationship between job satisfaction and organizational citizenship behaviour, here, too, it would be important to keep the potential role of moderation in mind. The literature review reported earlier in Chapter 2 indicated that such variables as self-efficacy, opportunity to share, and social norms influence knowledge sharing behaviour. Thus, for instance, even in cases where job satisfaction is high, if self-efficacy is low, then it seems plausible that both

knowledge donating and knowledge collecting would be compromised: while generally satisfied with her job, a teacher with low self-efficacy may be reluctant to either donate or seek knowledge for, among other things, fear of being considered incompetent by her colleagues. Similarly, the opportunity to share would influence actual sharing: highly satisfied and committed teachers may be eager to share knowledge, but be denied to do so by a dearth of knowledge sharing opportunities.

In general, all the factors identified in the literature review as important antecedents of knowledge sharing behaviour may potentially moderate the relationship between each of job satisfaction and organizational commitment, and knowledge sharing behaviour. An important avenue of research, therefore, would be to investigate whether these factors do in fact moderate the relationships between workplace attitudes (job satisfaction and organizational commitment) and knowledge sharing behaviour.

In the case of the relationship between organizational commitment and knowledge sharing behaviour, as well as moderation, there is another dimension that must be borne in mind. Although in this study the focus was on organizational (i.e. school) commitment, teachers are employees not of the school, but of the Department of Secondary Education, and are often transferred from one school to another. Consequently, teachers might have found it difficult to answer the survey questions on commitment, where the seven items on commitment all asked participants to report their feelings in relation to this "this school" or my "school". More generally, an important consideration to keep in mind is that, as Reichers (1985, pg.471) persuasively argues, "organizations are coalitions of entities" and that "employees of organizations are themselves aware of the multiple sets of goals and values that different coalitions espouse"; as such commitment in the workplace may be directed at different targets. Indeed, according to Meyer *et al.* (2004, pg.993), a "major development in commitment theory has been the recognition that commitment can be directed toward various targets, or foci, of relevance to workplace behavior, including the organization, occupation, supervisor, team, program, customer and union". For instance, in the study by Redman & Snape (2005, pg.301) "co-workers, the union, the union representative, customers,

and the immediate boss [emerged] as separate foci of commitment, distinct from 'global' commitment to the organization as a whole".

It is thus possible that while this study sought to measure 'organizational' commitment, respondents may have been thinking in terms of a different type of commitment, so that in the end the relationship being quantified was in fact not between organizational commitment and organizational citizenship behaviour. Thus, although teachers participating in this study generally appeared to be committed to their schools, their commitment may in fact have been directed at other targets, such as supervisors and the profession, and not necessarily their schools. Consequently, this study may have been unwittingly measuring the relationship between some of these other commitments and knowledge sharing behaviour. It would be interesting, therefore, to try and disentangle commitment among teachers, and determine which commitment in particular — if any — is related to knowledge sharing behaviour.

6.3.5 Job satisfaction and organizational commitment

The sixth research question sought to investigate the relationship between job satisfaction and organizational commitment. In the organizational behaviour literature, a robust correlation is usually reported between these two variables; in their 1990 meta-analytic analytic review of the literature on the antecedents, correlates and consequences of organizational commitment, Mathieu & Zajac (1990), cited in Spector (2003), reported a mean correlation of 0.49 between (global) job satisfaction and organizational commitment. This figure is quite similar to the 0.45 obtained in the current study, indicating that in the sample considered here, just as in samples considered in other organizational and cultural contexts elsewhere, job satisfaction and organizational commitment are robustly positively correlated.

6.3.6 Structural equation modeling

The seventh research question read:

> *Can a structural equation model be built relating knowledge sharing behaviour, organizational citizenship behaviour, job satisfaction, and organizational commitment?.*

A structural regression model relating the variables knowledge sharing behaviour, organizational citizenship behaviour, job satisfaction, and organizational commitment was successfully constructed. Perhaps the key advantage of the structural modeling approach is that it allows for the testing of the hypothesized relationships at once, rather than one at a time as when using regression and correlation analysis; in the latter approach, looking at — say — the relationship between knowledge sharing behaviour and organizational citizenship behaviour ignores the influence of the other variables — in this case job satisfaction and organizational commitment — on the two variables being considered. The modeling approach followed in this study is discussed in detail in Chapter 5; suffice is to say that the results obtained following the structural regression modeling approach agreed with the results obtained through the regression and correlation analysis.

6.3.7 The role of demographic variables

The final research question was concerned with the relationships between the demographic variables (gender, age, organizational tenure, and occupational tenure) and each of knowledge sharing behaviour, organizational citizenship behaviour, job satisfaction, and organizational commitment. Job satisfaction was found to be positively correlated to each of age, organizational tenure, and occupational tenure. The literature, too, indicates that age and, to a lesser extent, organizational tenure are positively related to job satisfaction: the meta-analysis by Brush et al. (1987) reported mean correlations of 0.22 between age and job satisfaction, and 0.13 between job satisfaction and organizational tenure. Warr (2001), cited in Spector (2003), has suggested that older employees generally have different

values and expectations compared to their younger colleagues, which may result in older employees being satisfied with jobs that younger employees dislike.

With respect to gender, males appeared to be more satisfied with their jobs than females. Garcia-Bernal *et al.* (2005) argued that differences in job satisfaction levels among males and females may be reflective of the different levels of importance each gender attaches to the different aspects of the job. In the current study, job satisfaction was only measured globally; further research to determine where specifically the differences lie should be encouraged.

Organizational commitment was not related to any of age, organizational tenure, or occupational tenure. This is rather surprising given that both organizational tenure (Marchiori & Henkin, 2004; Tao *et al.*, 1998) and age (Angle & Perry, 1981) have been found to be positively related to organizational commitment. However, it is important to acknowledge that some studies — such as Cho & Kwon (2005) — too,did not detect any relationship between organizational tenure and organizational commitment.

In the current study, too, gender was not found to be related to organizational commitment. This agrees with Karrasch (2003) who did not find gender to be related to organizational commitment. Nevertheless, it is important to acknowledge that some researchers, such as Angle & Perry (1981), have reported higher levels of commitment among females; this suggests that further research to clarify this issue in the Botswana context, particularly among school teachers, would be warranted.

Organizational citizenship behaviour was unrelated to any of the demographic variables. This is in keeping with the observation by Podsakoff *et al.* (2000, pg.530) whose comprehensive review of the literature had concluded that "generally speaking, demographic variables (e.g. organizational tenure and employee gender) have not been found to be related to [organizational citizenship behaviours]". It is worth noting, though, that some studies did find demographic variables to be related to organizational citizenship behaviours: in Alotaibi (2001) organizational tenure positively correlated with organizational citizenship behaviour, while Garg & Rastogi (2006) females reported higher levels of organizational citizenship behaviours than their male counterparts. Further research would help clarify the situation in the case of teachers in Botswana.

The literature (Boardia *et al.*, 2006; Lin, 2006; Taylor, 2004) suggests that gender influences knowledge sharing behaviour; however, this study did not find any relationship between gender and knowledge sharing behaviour. Knowledge sharing was also not related to age, although intuitively one might have expected older teachers to be more willing to share their expertise with their younger colleagues. Furthermore, contrary to reports by Bakker *et al.* (2006) and Boardia *et al.* (2006) that tenure was positively related to knowledge sharing, for the sample considered in this study, knowledge sharing behaviour was unrelated to occupational tenure, but — somewhat alarmingly — appeared to be negatively influenced by organizational tenure. This would seem to imply that when teachers first arrive at a school, they are willing and eager to share knowledge with their colleagues, but over time they lose interest in knowledge sharing perhaps because of the lack of interest in knowledge sharing that they observe among their colleagues. This is counterintuitive, given that the level of knowledge sharing behaviour was generally high among the teachers in the sample considered in this study.

6.4 Research contributions and conclusions

This thesis makes a number of important contributions to the literature in both Knowledge Management and Organizational Behaviour. Firstly, the thesis tests — and demonstrates the suitability of — a number of measuring instruments in contexts where such instruments have generally not been used. All four study constructs (i.e. knowledge sharing behaviour, organizational citizenship behaviour, job satisfaction, and organizational commitment) were measured using instruments sourced from the literature, and all four instruments have been found to be applicable within the context of the current study.

Secondly, the study investigated a number of relationships that while widely reported on in the literature, have generally not been considered in the context considered in the present study. Some such relationships (job satisfaction vs. organizational commitment; organizational commitment vs. organizational citizenship behaviour) have been found to be in accordance with findings from studies conducted elsewhere, suggesting that such relationships are robust enough

to be insensitive to differences in culture, be it organizational or national. However, contrary to findings reported elsewhere in the literature, job satisfaction was not found to be related to organizational citizenship behaviour, suggesting that cultural contexts may have a bearing on the relationship between these two constructs. The study also investigated the relationships between demographic variables and each of the four study constructs, obtaining results generally in conformity with results from elsewhere.

Thirdly, this thesis investigated a number of relationships that have generally been ignored in the literature, and also developed a model explicating such relationships. The main argument developed in this thesis was that knowledge sharing behaviour and organizational citizenship behaviour were related, with the former being a specific instance of the latter. Consequently, the thesis suggested that organizational citizenship behaviour and knowledge sharing behaviour would be strongly positively correlated, and that job satisfaction and organizational commitment — robust predictors of organizational citizenship behaviour — would also be robust predictors of knowledge sharing behaviour. Thus, the study proposed — and tested — a model linking together knowledge sharing behaviour, organizational citizenship behaviour, job satisfaction and organizational commitment; first presented in Chapter 4 as Figure 4.1 (see page 74), the model is reproduced here as Figure 6.1. In essence, the model is a nomological net — defined by Judd *et al.* (1991, p.46) as "the set of construct–to–construct relationships derived from the relevant theory and stated at an abstract, theoretical, level" — that sought to demonstrate what other relationships would hold if indeed knowledge sharing behaviour was a type of organizational citizenship behaviour.

Out of the six relationships suggested by the model, three received empirical support. Of these, only one directly includes knowledge sharing behaviour i.e. hypothesis H1. Based on the sample used in this study, therefore, it can be concluded that the argument that knowledge sharing behaviour is a kind of organizational citizenship behaviour did not receive empirical support. The model itself, however, should not be off–handedly dismissed. Indeed, structural regression modeling indicates that a five factor model (see Figure 6.2) in which knowledge sharing behaviour is split into knowledge collecting and knowledge donating is plausible. Although the path coefficients remained unchanged when the
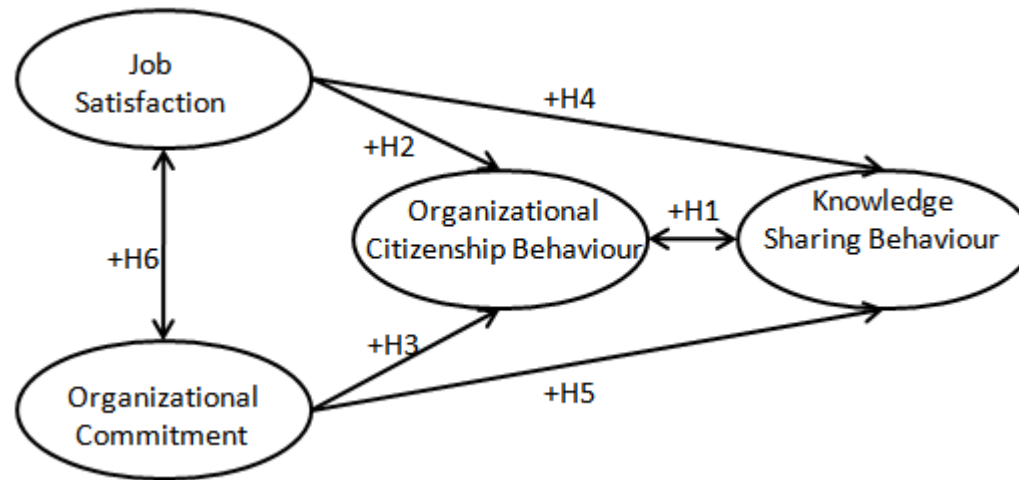
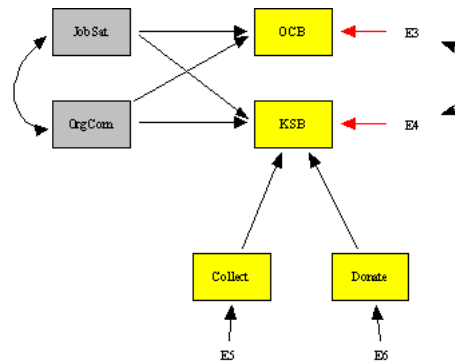Figure 6.1: Conceptual framework [H1, H3, and H6 were supported.]

Figure 6.2: Five actor path model

four factor model (Figure 6.1) was respecified as a five factor model, the statistics did indicate that the five factor model fit the data very well.

In summary then, while knowledge sharing behaviour and organizational citizenship behaviour were significantly positively correlated, the evidence generated in this study is not sufficient to conclude that the former is a kind of the latter; firstly, the correlation between the two was only modest, and, secondly, other hypothesized relationships within the proposed nomological net were not supported. Nevertheless, the study did make important contributions about the relationships among the various constructs and variables it investigated. Furthermore, structural regression analysis supported the notion that the proposed model is a useful organizing framework for studying the correlates and antecedents of knowledge sharing behaviour. Thus, this study has demonstrated the utility of positioning knowledge sharing research — and knowledge management research in general — within the context of the study of organizational behaviour; knowledge sharing behaviour, like other behaviours that people engage in within the workplace, is, to a large extent, a function of workplace attitudes.

6.5 Implications for management

Levels of all four study variables (job satisfaction, organizational commitment, organizational citizenship behaviour and knowledge sharing behaviour) among the sample considered were quite high; particularly noteworthy is the level of knowledge sharing behaviour, which may be considered this study's defining variable.

This state of affairs should be commended and encouraged. As Laka-Mathebula (2004, p.180) notes, "a managerial approach that is based on leadership behaviour that is based on sharing information, demonstration of concern for employee welfare, and equitable rewards has significant implications for managing employee behaviour".

Organizational citizenship behaviour correlated positively with knowledge sharing behaviour, suggesting that efforts to nurture the former would also help grow the latter. As well as organizational commitment and job satisfaction, the literature review (see Chapter 3) indicated that predictors of organizational citizenship behaviour included job involvement, organizational justice, and supportive leadership. Indeed, Jex (2002) argues that the effect of the various predictors of organizational citizenship behaviour is additive, suggesting that a holistic approach, rather than one that focuses on one or other of these predictors, should be preferred. Thus, schools managers could potentially improve organizational citizenship behaviour, and knowledge sharing behaviour, by manipulating these other variables.

The results obtained in this study indicate that organizational commitment predicts organizational citizenship behaviour. The review of the organizational commitment literature presented in Chapter 3 indicated that commitment was related to organizational characteristics, work experiences, and job satisfaction. Indeed, in the current study, job satisfaction robustly positively correlated with organizational commitment. Predictors of job satisfaction include, among others, job characteristics and work-family conflict (see also Chapter 3). Thus, teacher managers should give some thought to enhancing these antecedents of both organizational commitment and job satisfaction in order to enhance these two variables, as well as both organizational citizenship behaviour and knowledge sharing behaviour.

As intimated earlier, though, care should be taken when seeking to encourage organizational commitment: raising teacher commitment to a particular school may create difficulties when a teacher is transferred from one school to another. A teacher who is deeply committed to a particular school may find such a move traumatic, and may thus find it difficult to transfer allegiance from the old school to the new school. This may potentially be countered by focusing on increasing

occupational commitment, so that even when a teacher is transferred to another school, because such an individual remains in the teaching profession, then the negative effects of commitment to the old school are mitigated.

Although job satisfaction did not predict either of organizational citizenship behaviour or knowledge sharing behaviour, school managers should not be tempted to assume that job satisfaction is irrelevant in school contexts; the body of literature linking job satisfaction to organizational citizenship behaviour and many other important variables is too vast to ignore. Furthermore, in this study, only global job satisfaction was considered; in order to develop a deeper appreciation of teacher job satisfaction and its correlates, it might be fruitful to also look at the different facets of job satisfaction. In any case, one cannot conclude on the basis of a single study that within the Botswana senior secondary school context job satisfaction has no role to play!

Teachers indicated that they shared knowledge about the teaching profession, administrative issues, and the particular subjects they taught. The suggestions made for improving organizational citizenship behaviour would also be appropriate for enhancing knowledge sharing. A further way in which knowledge sharing can be encouraged and enhanced is through the formation of communities of practice (Wenger, 1998). Communities of practice can be useful not only for sharing existing knowledge, but also for generating new knowledge. Where such communities of practice are electronic, membership can be drawn from any number of schools, bringing the added benefit of enhancing information and knowledge transfer among schools. However, in establishing communities of practice, care would need to be taken to ensure that participation is voluntary, and that the community of practice is **not** viewed as an extension of the formal work environment, either by individual teachers or by management; such perceptions would ultimately render the initiatives worthless as teachers would invariably be reluctant to participate.

6.6 Directions for future research

Although many of the relationships investigated in this study were at best weak, these findings cannot be construed to be suggesting that organizational citizenship

behaviour has no place in knowledge sharing research. This study should be seen as only the beginning of the research into the relationships between these two constructs which have in common the notion that they are prosocial and yet positively related to organizational performance. Future studies can extend the current study in a number of ways:

- Science works by replication, and a study that investigates the relationship among knowledge sharing behaviour, organizational citizenship behaviour, job satisfaction, and organizational commitment under similar conditions to those of the current study would be invaluable. However, it is also important to remember that the bigger question is not so much whether organizational citizenship behaviour and knowledge sharing behaviour are related among Botswana secondary school teachers, but *whether the two are related in organizational contexts in general.* As such, it would be instructive to extend the work reported in this thesis by sampling people in other work environments, across different industries and cultures, in both the public and private sectors.

- The literature suggests that job satisfaction and organizational commitment are causally related to organizational citizenship behaviours, yet in this study, neither of these workplace attitudes was significantly related to organizational citizenship behaviour. It would be useful to explore these relationships further using different samples from the Botswana context to see whether the lack of relationship reported here generally holds, or is just an artefact of the sample selected for this study.

- The fact that item analysis of the measuring instruments used in this study indicated that some items be dropped would seem to suggest that there is need to investigate the applicability of these measuring instruments — which were generally developed and tested in Western cultures — in African contexts, and, in particular in the Botswana context. Confirmatory factor analysis would be singularly useful for such studies.

- It would appear that in the version of the knowledge sharing scale used in this study, respondents were unable to distinguish between 'knowledge

donating' and 'knowledge collecting'. Since this scale was a modification of an earlier scale (van den Hooff & de Leeuw van Weenen, 2004), it would be interesting to investigate whether the original scale did in fact distinguish between these two sub–dimensions of knowledge sharing behaviour crisply enough for such differences to be picked up by respondents whose mother tongue is not English.

- Both the knowledge sharing scale used here and the original knowledge sharing scale do not include items about the nature of the knowledge being shared. In the current study, such items were included, and they correlated well with the other items already in the knowledge sharing scale. It seems plausible, however, that employees may be willing to share knowledge about certain aspects of their work, but not about others. Future knowledge sharing research would do well to investigate topics about which employees are willing — or unwilling, as the case might be — to share knowledge.

- Further research should be undertaken to clarify the relationship between demographic variables and each of knowledge sharing behaviour, organizational citizenship behaviour, job satisfaction, and organizational commitment.

6.7 Concluding remarks

This study contributes to the growing body of literature that seeks to place knowledge management concepts such as knowledge sharing behaviour in the broader organizational behaviour literature, in the process helping the knowledge management discipline itself break away from the shackles of technology that were so evident in the early years of the discipline. The study proposes a tentative model (see 4.1 on page 74) that seeks to explain how knowledge sharing behaviour can be fostered in organizational contexts; the model also opens the way for research into how other factors that are known to be correlated to prosocial organizational behaviour may influence knowledge sharing behaviour.

Considering knowledge sharing behaviour as prosocial behaviour also suggests that knowledge hoarding may possibly be considered counterproductive behaviour, in the same category as shirking, lateness, and absence, though perhaps not in the same category as overtly counterproductive behaviour such as theft and violence. Thus, from this perspective too, there is much that knowledge sharing can still learn from the organizational behaviour literature. The study has also provided useful information about the levels of job satisfaction, organizational commitment, organizational citizenship behaviour, and knowledge sharing behaviour in selected schools in Botswana, which information can be used to inform further research, as well as professional practice.

Appendix A

Research letters and permits

This appendix consists of copies of letters from three important gatekeepers, namely, (i) Professor Boon who supervised this study and without whose approval the study would not have been able to take off, (ii) the Permanent Secretary in the Ministry of Education without whose permission no research study can be undertaken in the Botswana public education system, and (iii) the Chief Education Officer (South) under whose ambit the schools targeted by the current study fall. The covering letter requesting individual teachers to participate in the study is included, together with the entire questionnaire, in the next appendix.

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1908 - 2008

UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

IBIT Fakulteit, Skool van Inligtingtegnologie
Departement Inligtingkunde
EBIT Faculty, School of Information Tegnology
Department of Information Science

03 April 2008

TO WHOM IT MAY CONCERN
RE: Doctoral research studies – Mr IC Mogotsi [Student No. 27142036]

This serves to confirm that Mr Isaac Mogotsi is a doctoral student in the Department of Information Science, University of Pretoria. Mr Mogotsi's doctoral research, which I am supervising, examines the relationships among knowledge sharing behaviour, organizational citizenship behaviour, job satisfaction, and organizational commitment amongst secondary school teachers in Botswana. His research proposal has been examined and approved by the relevant research and ethics committees here at the University of Pretoria, and as such, he has been granted leave to proceed with the data collection phase of his studies.

I would be grateful if you could afford Mr Mogotsi the assistance he needs to complete his study.

Sincerely

Professor JA Boon, Research Professor
Department of Information Science
University of Pretoria

Navrae / Enquiries: Prof JA Boon
Tel. nr: +27 (0)12 420 2962   Faks / Fax no:. +27 (0)12 362 5181
Kantoor / Office: IT 6-7149   E-pos / E-mail: hans.boon@up.ac.za

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TELEPHONE: 3655400

TELEX: 2944 THUTO BD

FAX: 351624/3655408

REFERENCE E 11/ 17XXXX IV (25)

MINISTRY OF EDUCATION

PRIVATE BAG 005

GABORONE

BOTSWANA

REPUBLIC OF BOTSWANA

22nd May 2008

To: Isaac Carter Mogotsi
Box 10170
Gaborone

RE: REQUEST FOR A PERMIT TO CONDUCT A STUDY ON: "THE RELATIONSHIPS AMONG KNOWLEDGE SHARING BEHAVIOUR, ORGANISATIONAL CITZENSHIP BEHAVIOUR, JOB SATISFACTION, AND ORGANISATIONAL COMMITMENT"

We acknowledge receipt of your application to conduct a research on "The relationships among Knowledge Sharing Behaviour, Organisational Citizenship Behaviour, Job Satisfaction and Organisational Commitment "

This serves to grant you permission to conduct your study with the aim of addressing the following research questions:

1. *What is the nature of the relationship between organisational citizenship behaviour and knowledge sharing behaviour?*
2. *How does job satisfaction interact with organisational citizenship behaviour?*
3. *What is the influence of job satisfaction on knowledge sharing behaviour?*
4. *What is the relationship between affective organisational commitment and organisational citizenship behaviour?*
5. *How is organisational commitment related to knowledge sharing behaviour?*
6. *What is the nature of the relationship between job satisfaction and organisational commitment?*

Please note that this permit is valid for a period of one year effective from 22nd May 2008 to 22nd May 2009.

You are furthermore requested to submit a copy of your final report of the study to the Division of Planning, Statistics and Research, Ministry of Education, Botswana.

Thank you.

Yours faithfully

B.B. Nduna
For / Permanent Secretary

MINISTRY OF EDUCATION

TELEPHONE: (267) 3901263
FAX: (267) 3975899

Republic of Botswana

Chief Education Officer
South Central Region
Department of Secondary Education
Private Bag 00343
GABORONE
BOTSWANA

REO 1/15/2 II (11) PEO

10 June 2008

Mr Isaac Mogotsi
University of Botswana
Private Bag UB 00701
GABORONE

Dear Sir

APPLICATION FOR RESEARCH PERMIT

I am pleased to inform you that permission for you to carry out your doctoral research as per your request in our Secondary Schools in the South Central Region is granted.

Please note that for other regions such as South in Kanye, North in Francistown, Central in Serowe and West in Maun, you will have to contact their respective Chief Education Officers.
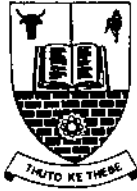
Thank you.

Yours Faithfully

M.B. Kelaotswe
For/ **CHIEF EDUCATION OFFICER, SOUTH CENTRAL REGION**

Appendix B

Study questionnaire

University of Botswana
FACULTY OF BUSINESS
Private Bag UB 00701
Gaborone, Botswana

Telephone: (267) 355-0000 Switchboard
Telephone: (267) 355 + Extension   Fax: (267) 355-....
Telex: (267) 2429 BD   Telegraph: University Gaborone

03 June 2008

RE: Research study on knowledge sharing among teachers

Dear Colleague,

I am a lecturer in the Department of Accounting & Finance at the University of Botswana undertaking research on knowledge sharing among teachers. If successful, the study would make useful practical and theoretical contributions to knowledge sharing among teachers, and also add to the human resource management literature in general. I would be grateful if you could fill in the attached questionnaire. When piloting this questionnaire at a secondary school in Gaborone, people generally took less than ten minutes to complete it.

I would like to urge you to be as truthful as possible in order to enhance the value of the study. The completed questionnaires will only be seen by me. The data analysis will only be undertaken for all the respondents, and will thus only yield aggregate results. Furthermore, since there is no provision for you to enter your name on the questionnaire, there is no way in which your response can be traced back to you. Thus, you are guaranteed complete confidentiality.

I appreciate that you work under trying schedules and thank you so much for your time and cooperation,

Sincerely,

IC Mogotsi

Email: mogotsic@mopipi.ub.bw
Tel: 3555225 / 71511783

SECTION 1

1. In the space provided, please write 'M' if you are male, and 'F' if you are female. _____

2. How long have you been teaching at your current school? _____ years / months [circle as appropriate]

3. How long have you been a teacher? _____ years / months [circle as appropriate]

4. How old are you? _____ years

SECTION 2

		Strongly Disagree	Disagree	Agree	Strongly Agree
1	I find real enjoyment in my job				
2	I like my job better than the average person				
3	I am seldom bored with my job				
4	I would not consider taking another kind of job				
5	Most days I am enthusiastic about my job				
6	I feel fairly well satisfied with my job				

SECTION 3

	Strongly Disagree	Disagree	Agree	Strongly Agree
1				
2				
3				
4				
5				
6				
7				
8				

SECTION 4

		Strongly Disagree	Disagree	Agree	Strongly Agree
1	I go out of my way to introduce myself to substitute teachers				
2	I try to help substitute teachers any way I can				
3	I try to help my colleagues any way I can				
4	I volunteer to be involved in extra curricular activities				
5	I give colleagues advanced notice of changes in my schedule				
6	I volunteer to serve on committees				
7	I take things as they come in school without complaining				
8	I make it a point to arrive on time for work				
9	I spend a lot of my own time helping students				
10	I make a lot of suggestions to improve the overall quality of our school				
11	I am conscientious about getting to appointments on time				
12	I always make time to deal with parental concerns				
13	I am considerate of my colleagues' time				
14	I voluntarily attend important school functions				
15	My free time is my own time				
16	Too many of my colleagues don't take responsibility for their actions and decisions				
17	I devote time to help new teachers				

SECTION 5

		Strongly Disagree	Disagree	Agree	Strongly Agree
1	When I've learned something new, I tell my colleagues about it				
2	When they have learnt something new, my colleagues tell me something about it				
3	Knowledge sharing among colleagues is considered normal in my school				
4	I share information with my colleagues when they ask for it				
5	I share my skills with colleagues when they ask for it				
6	Colleagues in my school share knowledge with me when I ask them to				
7	Colleagues in my school share their skills with me when I ask them to				
8	I share information about the teaching profession with colleagues				
9	I share information about the subject I teach with colleagues in my school				
10	I share information about administrative issues with colleagues in my school				
11	I share pertinent information about students with colleagues in my school				
12	Colleagues in my school share information about the teaching profession with me				
13	Colleagues in my school share information about the subject I teach with me				
14	Colleagues in my school share information about administrative issues with me				
15	Colleagues share pertinent information about students with me				

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