EXAMINING THE TRANSFER OF ACADEMIC KNOWLEDGE TO BUSINESS PRACTITIONERS: DOCTORAL PROGAM GRADUATES AS INTERMEDIARIES

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Declaration

I certify that I am the author of this project and that any assistance I received in its preparation is fully acknowledged and disclosed in this project. I have also cited any source from which I used data, ideas, or words, either quoted or paraphrased. I also certify that this paper was prepared by me specifically for this course.

No portion of the work referred to in this study has been submitted in support of an application for another degree or qualification to this or any other university or institution of learning.

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Abstract

The relevance of academic research to practice has been a widespread topic for academics to debate. This study investigated whether practitioners who hold a business-related Ph.D. degree may act as intermediaries in the transfer of academic knowledge from academia to industry. Based on the extant literature, a model of knowledge transfer was developed and used as a lens of analysis. Twenty one Ph.D. graduates were interviewed. The data were subjected to content analysis to test current knowledge transfer theory.

First, it was found that the lack of demand for evidence-based knowledge in industry deters practitioners from using academic research. Second, when these practitioners remain involved in the academic domain, they are more likely to access and apply academic knowledge. Lastly, the attitude of a practitioner's employer or client impacts the probability of the practitioner using academic literature in decision making processes. The findings of this study revealed how influential an organization's culture is in determining what sources of knowledge practitioners access and apply to perform their responsibilities. The implications of this study include a recommendation for doctoral program curriculums to include more applied knowledge. Additionally, it recommends that industry employers should provide employees with access to academic literature. In summary, the results reinforced the importance of understanding the relationship between a source and a receiver as studied in this case between academics and practitioners.

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1. Introduction

The argument on the perceived irrelevance of academic research dates back to the 1980s when academic institutions were criticized for placing priority on scientific rigour over relevance to industry (Bennis & O'Toole, 2005; Knights, 2008; Van de Ven & Johnson, 2006). The disconnect between academics and practitioners has been deemed "the Great Divide" in that the theoretical contributions of researchers go unimplemented in practice (Rynes, Bartunek, & Daft, 2001). The very value and relevance of academic research has been called into question as a result of the perceived lack of applicability and generalizability of academic knowledge (Benjamin & O'Reilly, 2011). For example, the utilization of academic research on a regular basis by human resource managers is less than 1% (Rynes et al., 2001). As a result, a flurry of papers was published which reflected on this divide between academia and practice (Rottman, 2008; Serenko, Bontis, & Hull, 2011; Simmons et al., 2001; Starkey & Madan, 2001).

Knowledge has been defined as an individual's ability to take action (Berger & Luckmann, 1966). It provides the user with a justification and a motivation to alter their decisions (Hannabuss, 2001). Accordingly, industry practitioners require knowledge in developing and implementing an action strategy. Therefore, academic knowledge is only relevant to industry if it motivates practitioners to take action inspired by its content.

Booker, Bontis, and Serenko (2008) studied how business professionals access and utilize academic research in their daily work. They found that while practitioners do value academic research, it is the accessibility of this research that produces the detachment. This accessibility refers to the receiver's ability to effectively consume the knowledge. Simmons et al., (2001) established that the process of knowledge transfer mostly fails on the side of the receiver, which in this instance would be the practitioner. Additionally, Serenko et al. (2011) determined that books act as knowledge transfer agents, and further exploration

should include alternative transfer agents which are accessed by practitioners through direct or indirect channels. Direct channels of knowledge transfer occur when an individual accesses, understands, and executes the knowledge directly from the source (i.e., from an academic publication) (Almond, 2001). Knowledge is transferred through an indirect channel when the knowledge is modified and/or distributed to the end user by an intermediary (Nohria & Eccles, 1998).

This area of research is highly relevant in the current knowledge-based economy where organizations must utilize recent and relevant knowledge in their decision making to remain competitive (Parent, Roy, & St-Jaques, 2007). The source of this knowledge has increasingly become occupied by consultants, contributing to an increasingly alarming marginalization of academics (Knights & Scarbrough, 2010). Therefore, calls have been made for studies that examine possible transfer methods of evidence-based knowledge to practitioners (Rousseau & McCarthy, 2007).

There are several factors that justify the importance of the transfer of academic knowledge to practice. First, the volume of scientific research of a nation is positively correlated with its overall wealth (King, 2004; Rousseau & Rousseau, 1998). This correlation, however, becomes even stronger when a larger proportion of scientific discoveries reach practitioners. Second, the application academic research has been shown to increase an organization's sales and productivity (Fontana, Geuna, & Matt, 2006). Third, empirical evidence suggests a positive relationship between the commercialization of academic findings and organizational performance levels (Susanty et al., 2011).

However, academic works are usually targeted to other academics, including reviewers and editors. They are written in a complicated language, contain jargon, present advanced statistical techniques, have abstract ideas and theories, and assume the reader's familiarity with academic research in general. Thus, the accessibility of academic publications is a major barrier for the transfer of academic research to practice because practitioners often lack academic training,

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which is required to read and understand academic works. At the same time, graduates of doctoral business programs who are employed in the non-academic sector (e.g., managers who hold a Ph.D. in Business) are fully qualified to read academic publications and use academic findings for their decision making. This study attempts to contribute to the knowledge base by exploring whether business doctoral program graduates who work in practice are knowledge ambassadors acting as an indirect channel of knowledge transfer between academics and practitioners. Particularly, the purpose of this study is to explore whether business doctoral program graduates who enter the non-academic workforce acquire, utilize, and disseminate the academic knowledge in their daily decision making. The investigation of methods of knowledge transfer from an academic source to practice is important for various stakeholders.

2. Literature Review

2.1. Background on the Management Discipline

Throughout the entire history of academia, creating, communicating, and utilizing authenticated knowledge have been a recurrent purpose of the very existence of academic institutions (McLuhan, 1962; Roberts & Skeat, 1983; Saenger, 1975). It was the belief of Daniel Coit Gilman, the first president of Johns Hopkins University that it is "one of the noblest duties of a university to advance knowledge and to diffuse it not merely among those who can attend the daily lectures but far and wide."[1] Presently, the creation and dissemination of scientific knowledge is a common mission statement for universities, and research is considered one of the most important activities for faculty members (Jagodinski, 2008; Serenko, Bontis, & Moshonsky, 2012). However, there is debate on whether the academic institution is fulfilling its self-expressed mission. Khurana (2007) empirically studied business schools and concluded that the top US schools have lost focus on the mission of the legitimization of management and

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[1] http://www.press.jhu.edu/about/index.html

are motivated by self-interest and gain instead of knowledge creation. Pfeffer and Fong (2002) support this critique of business schools and state that the applicability of both education and research has fallen.

The role of the university often changes depending on the stakeholder consulted. The academic researcher has been viewed as the primary stakeholder for academic research. Spender (2005) expresses that management research has been driven by "a search for legitimacy, ownership and the control of management knowledge" (p. 1283) by these academic researchers. Policy makers' aspiration for universities is to enhance the quality of education and supply of useful knowledge in response to the rising demand for knowledge-intensive products and solutions (Yusuf, 2008). This increased training of the labour force is an important component of a university's function. Policy makers have the added pressure of addressing the demands of funding agencies to ensure continued funding. Therefore, the creation of valuable knowledge by academics for society as a whole is the concern of these policy makers. Practitioners should view the purpose of the university as a generator of knowledge for the development of industry. In high-tech industry clusters, this purpose is acknowledged by practitioners who view universities as an important contributor (Feldman, 1994). Where the commercialization of knowledge has become a focus for some institutions, collaboration with practice has become routine (Hitt, 1998; Van Aken, 2005).

This topic raises the question of what type of knowledge academics should pursue – fashion, or fundamental? (Abrahamson, 1991; Weick, 2001). Scarbrough (2002) defined fashionable knowledge as "knowledge that has been diffused, but which has not been institutionalized" (p. 89). There is an argument on both sides of the debate on what type of knowledge should be created by academics. On the one hand, there are views that academics should be encouraged to tailor management research to the practitioner audience, which reverses the proper relationship between academia and industry (Knights, 2008). On the other hand, there are arguments that researchers should focus on fundamental issues that constructively

criticize industry practices and do what is best for the development of science in general (Starkey & Madan, 2001). The problem, however, is that to the practical world, management research is viewed as not generalizable and lacking the ability for practical implementation (Jacob, 2001). According to Rynes et al. (2001), organizations tend to ignore numerous research findings, solutions, and strategies provided by academia.

Therefore, the management disciple has two goals to balance, scholarly rigour and social usefulness (Hodgkinson & Starkey, 2011). Consequently, it is important to understand the mechanisms that contribute to the widening of the Great Divide in order to sustain advancement in the management discipline. If the gap between the stakeholders continues to exist, it can impact the justification of the role of the academic researcher and even the sustainability of academia (Starkey & Madan, 2001). Business schools must become more responsive in addressing practical considerations, otherwise practitioners will access substitute suppliers of knowledge.

The market share of applied management knowledge has been increasingly taken over by business consultants, who became popular in the 1980s. Approximately the same time, the exponentially growing dissemination of knowledge through electronic means was observed, which in turn contributed to a high turnover of management fashions (Suddaby & Greenwood, 2001). Consultants are motivated to provide new knowledge to legitimize their profession (Alvarez, 1998). This diffusionist activity of consultants turns knowledge into a commodity (Scarbrough, 2002).

In summary, policy makers are searching for methods of knowledge transmission from academia to practice in order to address the increasing need for relevant knowledge, to promote innovation, and to encourage competitiveness (Hanberger & Schild, 2004). This process begins with the mobility of university-educated students who develop an association with academia and later enter the labour force (Fleming & Frenken, 2007), often as business consultants. According to

Bramwell and Wolfe (2008), the former students act as an intermediary between industry and academia to transfer academic research to practitioners, advise future research directions, and improve curriculum. However, the extent and manner in which these graduates transfer academic knowledge to practice requires further study. In line with this school of thought, this study will strive to gain an understanding of the possible function of Ph.D. graduates as an intermediary between academia and practice. The purpose is to understand what hinders the transfer of academic knowledge to practice and whether doctoral business program graduates, who are employed in private and public non-academic organizations, may bridge this gap.

2.2. Evidence-Based Management

Evidence-based policy procedures to leverage human capital was a focus of the "enlightenment" era (Sanderson, 2003). The application of methods which have been proven for decision making began in eleventh century with the adoption of evidence-based medicine which was documented in the medical encyclopedia "The Canon of Medicine" (Daly & Brater, 2000). Medical professionals pooled their collective experiences to determine proven methodologies so that effective approaches are adopted en mass and ineffective approaches discontinued. The knowledge contained within the encyclopedia created a groundwork for further research at academic institutions (Huff, 2003). The motivation behind the creation of the encyclopedia was to address variances in practice and provide an authority on successful and verified methods (Walshe & Rundall, 2001). Surprisingly, it wasn't until 2006 that this concept of evidence-based decision making became formally introduced in business disciplines (Pfeffer & Sutton, 2006).

In an extension of evidence-based medicine, Pfeffer and Sutton (2006) at Stanford University introduced the term evidence-based management, which refers to the transfer of principles based on best evidence into organizational practices. According to evidence-based management, managers can become more successful than their competition when they develop strategies based on tested evidence

(Rousseau, 2006). Goshal (2005) posits that the transfer of academic knowledge to practitioners has an effect on human behaviour by legitimizing actions consistent with academic evidence while delegitimizing nonconformist ones. It is this notion that this study will explore and test to determine if this legitimization and delegitimization occurs, or if it affects a practitioner's behaviour. Evidence can also provide a basis for performance measurement and hold practitioners accountable for results (Heinrich, 2007). According to Pfeffer and Sutton (2006) a constant flow of new information is important for managers to acquire reliable evidence that can be used to make credible decisions. If the results and recommendations of these scientific findings are unknown or ignored by practitioners, the value of such research is diminished.

Research has shown that practitioners access a variety of knowledge sources to solve a problem they encounter (Lamertz & Baum, 1998). The most favoured source is their own past experiences and intuition (Mazza & Alvarez, 2000). Practitioners trust the knowledge gained by their own past experience, not the findings of researchers and therefore rarely seek out new evidence (Pfeffer & Sutton, 2006). In contrast, practitioners may not trust external research streams because they believe that academics cannot accurately understand the dynamic environment of the practical world and provide usable knowledge. This is corroborated by Abrahamson (1996) who states that practitioners rarely access academic sources directly when forming a solution or strategy. If practitioners do access external knowledge, it is primarily non-academic literature written by practitioners such as themselves.

At the same time, Finkler (2004) suggests that if students study evidence-based examples of successful decision making, gather evidence-based practices, and observe their positive impact, they are more likely to value evidence-based research findings after entering the workforce. Thus, it is reasonable to conclude that doctoral business program graduates are supposed to seek scientific evidence and apply it throughout their entire professional careers.

2.3. Knowledge Transfer

Social construction theory was introduced in 1966 in the book "The Social Construction of Reality" (Berger & Luckmann, 1966). According to social construction theory, people modify their behaviour based on the knowledge they have acquired and interpreted about their environment (Parent et al., 2007). Therefore, knowledge is a social construct based on an individual's interactions which will motivate a change in one's behaviour (Alavi & Leidner, 2001). The creation and organization of an individual's knowledge is filtered through his or her own beliefs, values, and commitments (Lahti & Beyerlein, 2000). Thus, the concept of knowledge transfer is important because it shapes decision making processes of all people, including business professionals.

Knowledge transfer has become one of the most important strategic organizational tools. It is the key concept that all successful managers are aware of and apply in their daily work (Simmons et al., 2001). Knowledge transfer has also become a focus for many researchers who understand its importance for an organization's competitive advantage (Cavusgil, Calantone, & Zhao, 2003). When knowledge is allowed to flow within an organization, it enables organizational learning and the diffusion of implicit knowledge (Lahti & Beyerlein, 2000). When people are faced with a new opportunity or a problem, they require accessible knowledge to make the required modifications to their behaviour (Liyanage et al., 2009). The value in knowledge lies in its ability to help managers undertake better actions and improve their decision making (Davenport & Prusak, 1998).

Christensen (2003) provides an excellent explanation of the concept of knowledge transfer:

> "Knowledge transfer is about identifying (accessible) knowledge that already exists, acquiring it and subsequently applying this knowledge to develop new ideas or enhancing the existing ideas to make a process/action faster, better or safer than they would have otherwise been. So, basically knowledge transfer is not only about exploiting accessible resources, i.e. knowledge, but also about how to acquire and absorb it well to make things more efficient and effective" (p. 14).

What Christensen is alluding to is that knowledge transfer involves a series of activities which must be undertaken in an accommodating environment. This process is motivated by the increased productivity and quality of decisions made by the receiver. Therefore, knowledge transfer is more than accessing new knowledge; it is about creating more productive, informed individuals.

2.3.1. The Process of Knowledge Transfer

There are various theories explaining knowledge transfer and how knowledge is communicated from one individual to another. In the past, knowledge was considered an object which could simply be passed from one person to another without regard for the surrounding context (Parent et al., 2007). It was also assumed that knowledge transfer was a hierarchical, top to bottom interaction where the receiver of the knowledge was a passive actor (Roling, 1992).

However, this traditional model has been criticized for its linear perspective, which ignores context and exchanges between the two participants. Instead, the knowledge transfer process is bi-directional and as stated previously, fails most often on the receiver's side (Simmons et al., 2001; Szulanski, 1996). Therefore, the receivers cannot be passive entities that are bestowed knowledge from a

source. Instead, they must be active problem-solvers who generate their own knowledge base (Hutchison & Huberman, 1994). Knowledge transfer is a result of the interaction within a dyadic relationship (Knights & Scarbrough, 2010).

The newer process-based models of knowledge transfer are of the social constructivist perspective, which assumes that knowledge has an individual meaning to different people based on their experiences (Parent et al., 2007). Process-based models take into account the environment in which the knowledge is transferred and applied (Frambach, 1993). This process refers to "an element of semantic movement or subtle shift in meaning as the original knowledge product is disembedded from its original context, abstracted into iconic form and reembedded in another, somewhat different organizational context" (Suddaby & Greenwood, 2001).

In an organizational context, the legitimacy of the new knowledge is validated against the organization's culture (Roling, 1992). Therefore, knowledge transfer is not an identical replication. Instead, received knowledge is adapted to fit the receiver's individual situation (Foss & Pedersen, 2002). The ability of a business to apply organizational learning methods depends on whether its employees "acquire, disseminate and use knowledge in order to adapt to a changing external environment" (Hoe & Mcshane, 2010).

2.3.2. Theory of Communication

The theory of communication is comprised of a group of theories which focus on the behaviours exhibited during the communication process between the source and receiver (Baxter & Braithwaite, 2008; Dillard, 1990; Giles, 2008; Hewes & Planalp, 1987; Wilson, 1997). These behaviours include the use of both verbal and nonverbal messages to establish interaction patterns in the relationship. Because knowledge transfer is founded on behaviour and relationships, "the field of knowledge management must ultimately rest on theories that account for those behaviors and relationships" (Thompson, Jensen, & DeTienne, 2009).

For example, this focus is applied in the Goals-Plans-Action Theory which illustrates how a source can influence the receivers based on their behaviour during the transfer process (Dillard, 2008). Uncertainty Reduction Theory explains how individuals manage ambiguous situations which have unpredictable outcomes (Bylund, Peterson, & Cameron, 2012). Originally designed to understand the initial interaction between strangers, this theory states that the primary goal of an individual's communication is to decrease uncertainty. This allows one to better predict actions of others and the outcomes of different situations. Communication Accommodation Theory focusses on how communicating with another individual can alter one's communication behaviour (Bylund et al., 2012). Individuals accommodate their communication approaches based on their desire to either converge and match, or diverge and differentiate from the other person's style. According to Giles (2008), usually the individual who is perceived as possessing the least power in the relationship will do the accommodating.

With respect to the transfer of academic knowledge to practice, the theories discussed above underline the importance of understanding the relationship between the participants and the environment in which the exchange takes place. In terms of this study, it means paying attention to the practitioners' previous and current relationship with the academic sector, the communication channels through which they access academic literature, the culture of the company they work in, and how they communicate with their colleagues.

2.3.3. Antecedents of Knowledge Transfer

From a practical perspective, knowledge is useful only if it successfully embedded in the organization that enhances its effectiveness and efficiency (Zeitz, Mittal, & McAulay, 1999). The capacity-based model of knowledge transfer, which articulates that knowledge transfer occurs within a system (Parent et al., 2007), presents a number of antecedents which are necessary for knowledge to become embedded in an organization. The first capacity is described as generative

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capacity and refers to the system's ability to identify new knowledge and its applicability. This ability is derived from the user's intellectual and creative capital. The second capacity is disseminative, which refers to the ability to adapt and diffuse the knowledge within the specific environment within the system (Ghoshal, 2005). The validity of the new idea is assessed based on how well it aligns with the current norms prior to its diffusion (Greenwood, Suddaby, & Hinings, 2002). Often, the presence of communication infrastructure is integral to the diffusion process (Parent et al., 2007). The absorptive capacity of the firm is defined as the ability to recognize the value of new external knowledge, assimilate this knowledge, and apply it to address relevant issues for a system's stakeholders (Parent et al., 2007). This means that both individuals have to already possess a requisite level of knowledge in order to participate in knowledge transfer. The absence of this capacity has been identified as one of the most prevalent barriers to organizational learning and knowledge transfer (Cohen & Levinthal, 1990). The last capacity refers to adaptive and responsive capacity, defined as the ability to continuously learn from interactions with other organizational members. This would often involve a feedback system that renews elements of the knowledge transfer system which ensures that the system possesses a sustainable knowledge transfer system (Parent et al., 2007).

In addition, trust is an important aspect of knowledge transfer because the recipients have to trust that the knowledge source is credible and valid. If people do not trust the source, they will be resistant to the knowledge that the source is trying to impress upon them, and they will not alter their current behaviour to reflect the knowledge (Politis, 2003). When new knowledge is adopted and implemented, it is disruptive to the existing practices and status quos. Therefore, there has to be a willingness to acquire new knowledge from the source (Liyanage et al., 2009). Often, a common frame of reference is important since individuals are more likely to accept knowledge from someone similar to themselves (Lahti & Beyerlein, 2000).

In conclusion, the extant literature identifies important antecedents of knowledge transfer, such as continuous learning, adaptation, a requisite level of knowledge, and a healthy relationship between the source and the receiver, which may be employed to understand the role of knowledge recipients within the academic-practitioner divide. Therefore, it is important to understand the functionality and nature of the relationship between academic sources and practitioners.

2.3.4. Knowledge Transfer Channels

The transfer of knowledge can occur over a variety of mediums through either direct or indirect methods. A direct channel of knowledge transfer occurs when the receiver accesses the material written by the creators of the academic knowledge through mediums including journals, books, and conference proceedings. However, practitioners are rarely directly exposed to or utilize current academic material (Pearson, Pearson, & Shim, 2005). Therefore, these practitioners should access knowledge through indirect channels where the knowledge is transformed by an intermediary into an accessible format that is applicable to the receiver's environment (Nohria & Eccles, 1998). Understanding and identifying effective indirect channels is key to conveying academic research to practitioners (Serenko et al., 2011).

For example, medical patients avoid information they believe themselves to be unqualified to consume and instead defer to the information provided by their health care providers as authorities (Baxter & Braithwaite, 2008). In comparison, practitioners who do not possess a Ph.D. can indirectly access academic material by communicating with practitioners holding a Ph.D., as a channel for knowledge transfer. This indirect channel occurs when the non-Ph.D.-holding individuals are exposed to academic theory through the Ph.D. graduates who possess the capacity for synthesizing and communicating the originally inaccessible knowledge.

2.4. Knowledge Transfer Model

In order to explore the dissemination of knowledge, this study adapted the process-based model of knowledge transfer proposed by Liyanage et al. (2009) (see Figure 1). This model conforms to the notion that knowledge is not an object which can be passed in static form from one person to another because it is through the process of interaction an individual attaches new meaning to its environment (Parent et al., 2007). This model depicts a process which occurs on different levels of the organization. Both the source and the receiver of the knowledge have to actively engage in the knowledge transfer process and possess the necessary capabilities for the receiver to be able to effectively gain the new knowledge and be able to act upon it. Each step in the knowledge transfer process must be completed before proceeding onto the next. If not all of these steps are completed, then the process of knowledge transfer cannot have occurred, and the recipient's behaviour will not be impacted by the knowledge. As expressed by Knights and Scarbrough (2010), the need for such a model is emphasized by the constant debate in this field.
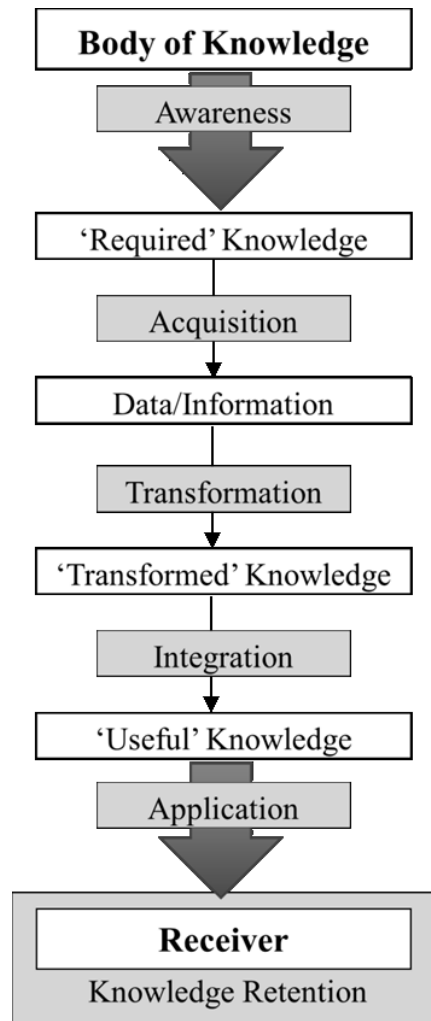
Figure 1 - The Process-Based Model of Knowledge Transfer. Adapted from Liyanage et al. (2009)

The process-based model of knowledge transfer begins with the recipient identifying what kind of knowledge is required to solve a particular problem. Therefore, the receiver must be able to correctly assess the situation and the surrounding environment. The receiver must next acquire this knowledge, which is currently known as information - knowledge that is unprocessed. It is in the third stage that information is transformed into new knowledge that builds on the recipient's existing knowledge, skills, or capabilities. The integration of this knowledge in the fourth step involves adapting the knowledge to the situation and

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environment at hand and making it 'useful'. In the next stage, this knowledge is applied to the current problem in an actionable strategy. The last step of knowledge retention was added to the original model because new knowledge should have a lasting impact on the constructive reality of the recipient. Knowledge should lead to action and not rest in an inert state, otherwise, it is simply information (Thompson et al., 2009).

3. Study Objective and Research Questions

The purpose of this study is to explore whether doctoral business program graduates who enter the non-academic workforce acquire, utilize, and disseminate the academic knowledge in their daily decision making. The following research questions are proposed:

1. Through what channels do doctoral business program graduates acquire new knowledge?
2. How does academic knowledge impact the daily routine of doctoral business program graduates working in the non-academic sector?
3. To what extent do doctoral business program graduates transfer academic knowledge to practitioners in their organizations?

4. Methodology

This study was exploratory in nature; its purpose was to describe and interpret the behavior of a specific group. Therefore, a qualitative approach was applied. Qualitative research allows for open designs to address the complex nature of the object under study. The environment is not a controlled laboratory situation but the everyday experiences of the subjects. Patterns will be constructed based on the meaning of individual experiences of the participants (Creswell, 2003). Qualitative research allows the researcher to design a study that maintains flexibility while achieving its objective (Flick, 2002).

In order to explore the use of academic knowledge in industry, practitioners who possess a Ph.D. degree were interviewed. These practitioners obtained their Doctorate in Canada in Business, Management, or a management-related discipline. The rationale for using Doctoral degree holders relates to the previously identified problem of the accessibility of academic research. Past studies revealed that academic papers are inaccessible to most practitioners due to jargon, length, writing style, and complicated statistics. Scholarly papers also mostly contain theoretical recommendations that need to be converted to practical application (Booker et al., 2008; Serenko, et al., 2012). Additionally, these studies determined that most business practitioners are unaware of the presence of scholarly publications. In studying individuals who are equipped with the necessary skills and experiences to utilize academic material, this acts to negate the inaccessibility issue. Therefore this study can focus on alternative explanations for the gap in the transfer of academic knowledge to practitioners.

Participants were recruited to partake in the study through two manners: Internet searches and referrals (i.e., snowballing). The first method was initially used to identify individuals through a Google search of each individual listed on a Canadian university's published graduate list from an applicable Ph.D. program. Graduates who worked in industry were identified through this process. If the individual's contact information was not available online, his or her dissertation supervisor was contacted to assist in reaching the graduate. The second method refers to approaching the individuals whom the researchers were referred to from past participants in a snowball approach.

4.1. Data Collection Method

Semi-structured interviews were conducted over the phone and recorded so that it could be transcribed verbatim. The interviews were designed to follow the process of knowledge transfer and explore how the participants progressed through the various stages (see Appendix I – Interview Questions). The interview protocol was subjected to peer face validation by consulting a group of four business

faculty members to address concerns of ambiguity and social desirability, which might negatively impact the reliability and validity of the data. The participants were originally told that the study was focusing on their use of various sources of knowledge, not specifically on their use of academic research. This deception was important in order to eleminate social desirability bias (Crowne & Marlowe, 1960; Fisher, 1993). A total of 21 interviews were conducted over the phone. The participants include nine consultants, six government employees, three investment managers, two post-doctoral fellows, and one employee of a private company (see Figure 2).
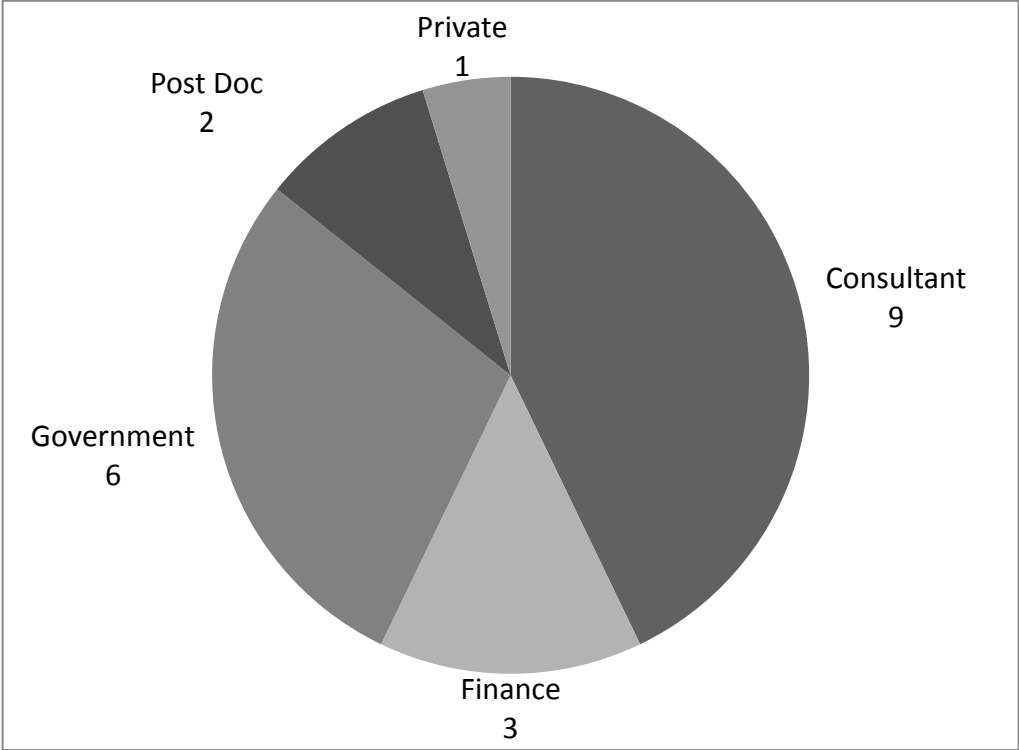

Figure 2 – Participants per Industry Sector

Twelve of the participants were female and nine were male. The participants graduated from their respective Ph.D. degrees between 1991 and 2011 with the average year 2005 (i.e., seven years ago). As shown in Figure 3, the participants possessed a wide range of Ph.D. degrees: six Industrial Organizational

Psychology, four Human Resource, four Management, four Information Systems and Knowledge Management, one Sociology, one Finance, and one Marketing.
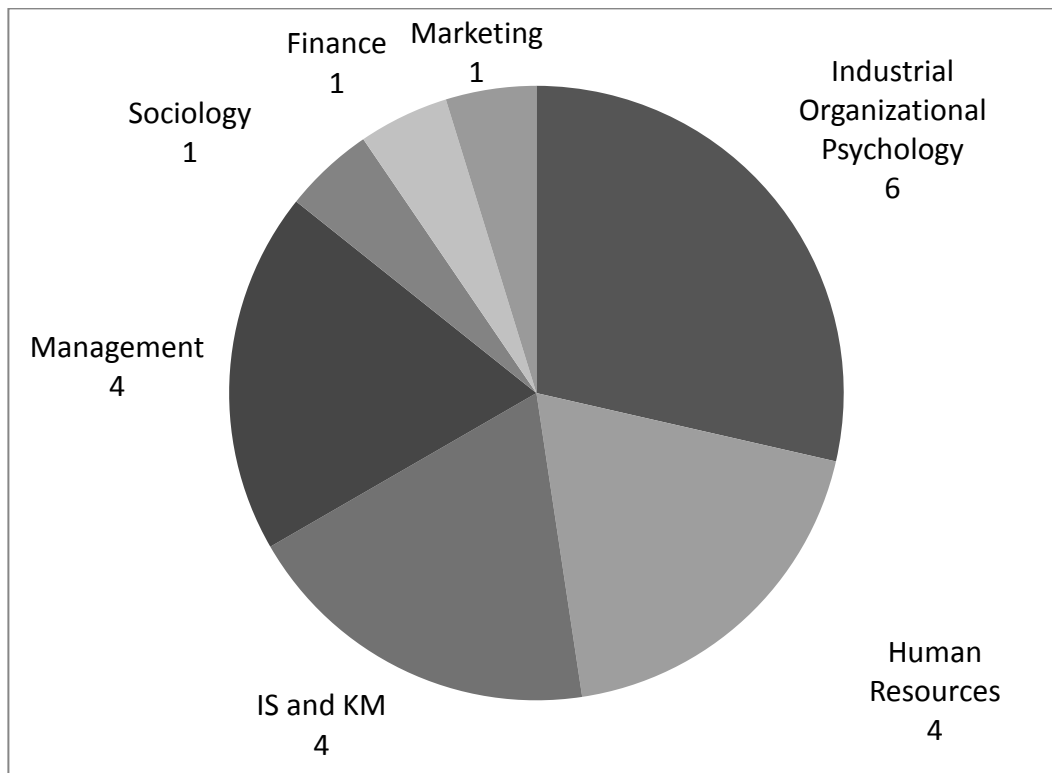
Figure 3 – Ph.D. Degrees of Participants

4.2. Data Analysis Method

The interviews were analyzed using content analysis, which is a systematic process of analyzing written, verbal, or visual content (Cole, 1988). Content analysis is the most appropriate method for analyzing the data from the interviews because of the allowed flexibility in the research design (Harwood & Garry, 2003). This technique allows for a continual reevaluation of categories established from existing theoretical models. Additionally, since content analysis provides a formalized analysis procedure, it facilitates the comparison of the different subjective viewpoints (Flick, 2002). The data was analyzed to determine the underlying relationships between an individual's characteristics, values, experiences, and environment with their demand, valuation, and use of knowledge.

More specifically, deductive content analysis was used to test previous knowledge established in the knowledge transfer field. Deductive content analysis structures the analysis around an earlier theory and moves from the general to the specific (Burns & Grove, 2005; Elo & Kyngas, 2008). Through this analytical process, researchers are able to understand connections between the data and form a picture of the experiences of the subject in its entirety, and trace meanings of communication (Burnard, 1991; Cavanagh, 1997; Lederman, 1991; Morse & Field, 1995). The process of deductive content analysis is depicted in a step model of deductive category application (Mayring, 2000).
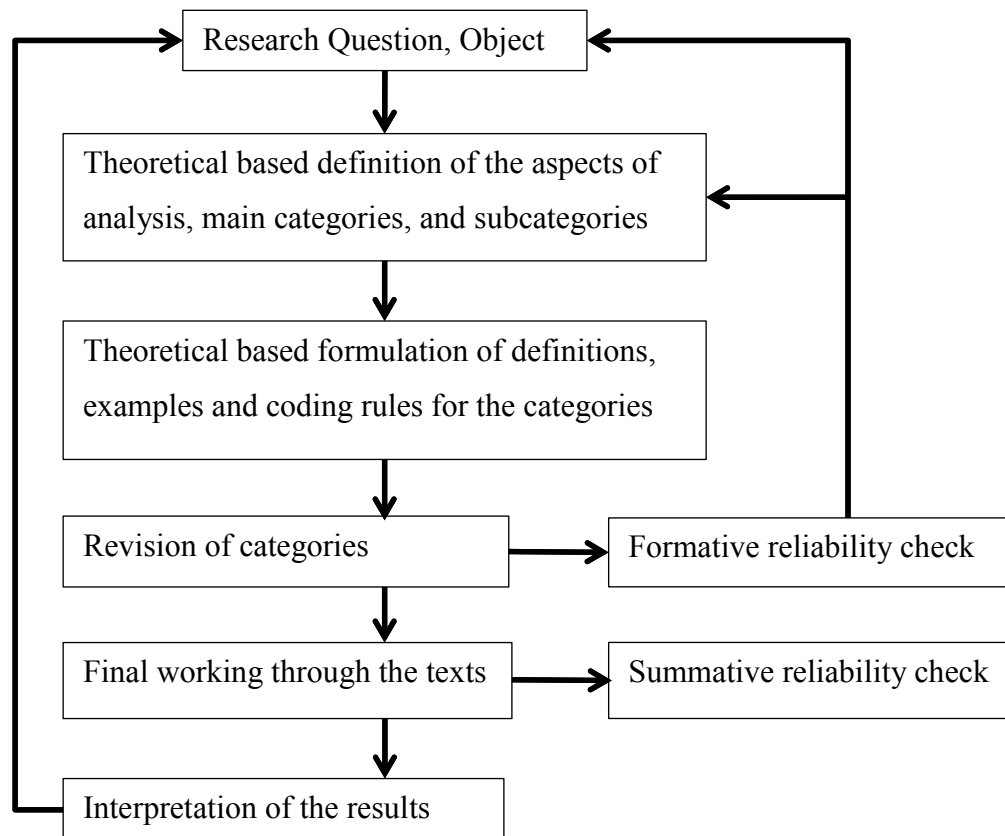

Figure 4 - Step Model of Deductive Category Application

The analysis is guided by the established research questions, which determine what content is analyzed and in what manner (Robson, 1993). Existing theory

then provides the foundation for a categorization matrix to guide the researcher in creating the codebook (Elo & Kyngas, 2008). Content analysis is not simply conducted using word counts. It becomes a powerful technique for analyzing data when it derives meaning from categorization of the data (Stemler, 2001). While the exact words might not be identical in a category, they all hold the same meaning (Cavanagh, 1997). The raw data from the interviews was transformed into manageable content categories based on systematic coding (Weber, 1990). The creation of codes is a challenge as they must be rooted in theory which can be substantiated (Dey, 1993). The codes used to analyze the data for this study were developed using the process-based model of knowledge transfer, aspects of the holistic model of knowledge transfer, known antecedents and barriers of knowledge transfer, and the theory of communication.

While traveling the dynamic path of deductive content analysis, the codes were continually reevaluated and transformed as the analysis progressed. The researcher then returned to existing theory which might explain observed phenomena and further direct the analysis. This check of reliability also involved an additional survey of the data to ensure the material was analyzed properly. The researcher's interpretation of the analysis provided an answer to the previously established research questions.

Content analysis is a method for making inferences from the data to their context that provides insights into the subject matter (Flick, 2002; Krippendorff, 1980). In order to ensure the reliability of the analysis, any ambiguity of category or word definitions must be addressed for valid interferences to be drawn (Weber, 1990). These inferences must demonstrate a relationship between the data and the results generated by the researcher (Polit & Beck, 2004). The accuracy of content analysis can be negatively impacted by research questions that are ambiguous or too extensive. This can contribute to the research under abstracting or under categorizing the data (Hickey & Kipping, 1996). Conversely, a researcher can over-interpret data and distort results (Elo & Kyngas, 2008). Another possible

limitation of content analysis materializes when the point of data saturation has not occurred which can lead to missed relationships or unlinked data (Cavanagh, 1997).

Reliable content analysis allows for the results to be replicated by other researchers by describing the methodology in a manner which facilitates this transfer of content and analysis (Graneheim & Lundman, 2004). According to Creswell (2003), validity is the strength of qualitative research as opposed to reliability and generalizability, which are a lesser concern. Validity can be built into the design of a qualitative study through triangulation (Erlandson et al., 1993). Triangulation refers to using a combination of methods when analyzing a phenomena (Flick, 2002). Theory triangulation was achieved in this study by incorporating multiple theories which builds credibility of the findings. Additionally, the differing perspectives of each participant in the study also contributed to data triangulation through the use of multiple data sources. The data analysis process was facilitated through the use of a qualitative data analysis program NVivo. Nvivo was used to organize and analyze the content from the interviews through queries, visualization, and report generation.

5. Results

The interviews were analyzed following each participants progression through the stages of knowledge transfer: knowledge awareness, knowledge acquisition, knowledge transformation, knowledge integration, knowledge application, and knowledge retention. Because only consultants and government employees formed relatively large groups, relatively large any comparisons between industries will only be done between these two populations.

5.1. Knowledge Awareness

Knowledge awareness was focused on what knowledge the practitioners believed they required to perform their job. Additionally, the study explored if these practitioners perceived academic knowledge as a necessary source. Each participant described what he or she believed was necessary knowledge to search for to perform job-related duties. After reviewing the responses, the sources were coded into four categories: 1) theory; 2) research methodology and technical knowledge; 3) current management trends; and 4) industry- and client-specific knowledge (see Figure 5). Theory was mentioned by twelve of the participants. Knowledge of methodology or technical tools was stated by eleven interviewees. Knowledge of management trends was mentioned by nine practitioners. Least frequent was industry- or client-specific knowledge with eight instances. Often, participants would state they require a variety of knowledge:

> *"Best practices in a given area that I'm working on, for example developing leadership capabilities. Thought leadership in terms of what is considered to be leading thinking on that topic. I'll look for different methodologies to deploy a particular solution area."(P 17)*

> *"I tend to think of it as I need a background in industrial organizational psychology, background in clinical accounting psychology, so literatures you can think of it as… background in the business literature and also really understanding the actual clients that I'm working with." (P 18)*
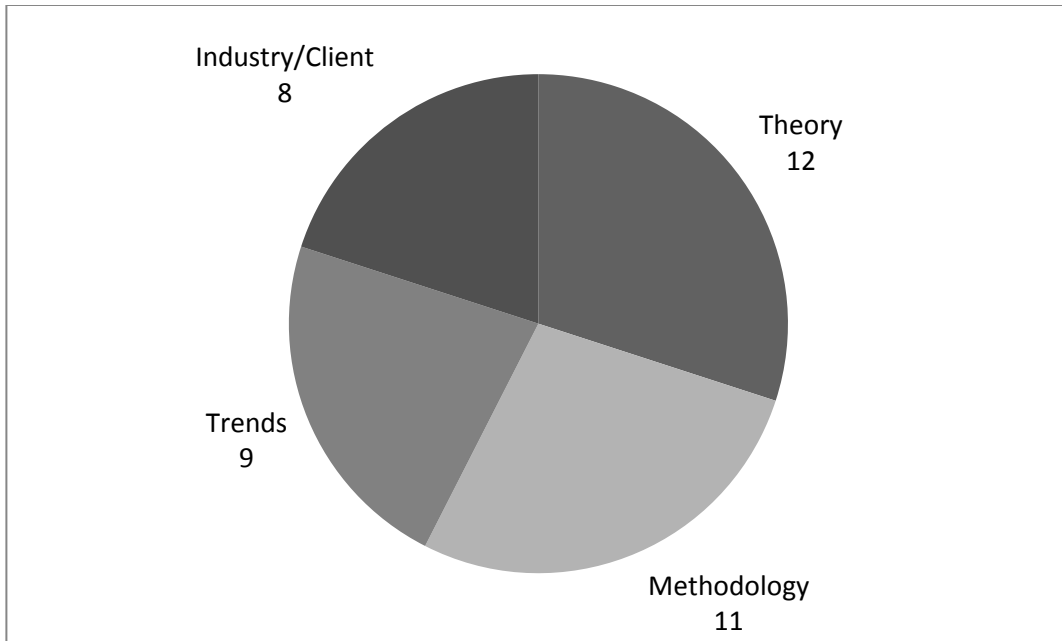
Figure 5 - Perceived Knowledge Requirement

Out of the 21 participants, ten subscribed to an alert system which notified them of new knowledge from a source (see Figure 6). Four of the nine consultants said that they did receive regular updates from their knowledge sources. Two of the three finance industry workers said that they were currently subscribed. Interestingly, when asked the finance respondents who did not receive alerts said they had not thought of that and will do so in the future. Half of the six government employees used alerts as well as one of the two post doctorates. Lastly, the one private employee did not use alerts. The following excerpt provides an example of a participant's use of alert tools:

> *"So there [are] four journals that they, that the Academy produces and every month I get an email that tells me the titles of all of the articles in each of the journals. So you can very quickly scan, the, basically the index of that month's publication and see if there is something that is of particular interest to your area." (P 8)*

Another participant provided an example of the latent effectiveness of using alert tools:

> *"I would say I pay selective attention probably because of the sheer number of things that come through and it's hard to pay attention when you don't see the immediate application. I would say more often, I hold onto them, the I kind of sort things and then I make a mental note that one day I may need to come back to that and if I see the opportunity and may come back to those things but in the moment I usually don't read them in the moment as they come through. Unless there's something really compelling that speaks to something that I deal with often that I see the immediate relevance."* (P 17)
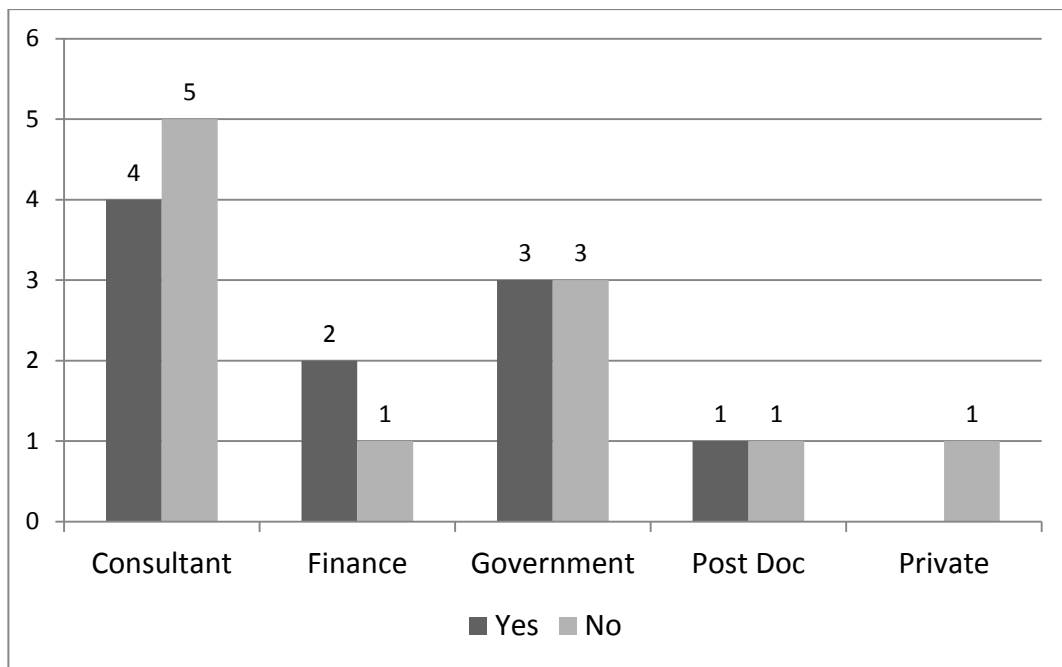

Figure 6 - Use of Alert Tools

Additionally, the participants described how they decide which source is required. The responses were coded in the following manner: 1) situational; 2) timely; 3) internal experience; 4) audience; and 5) reliability (see Figure 7). Situational means that the participant decides which source to access based on the nature of

the problem he or she encounters. Timely refers to the source which provides the quickest answer. Internal experience is both the past experience of the individuals themselves and of their colleagues. The audience is the group that the practitioner will present the new knowledge to. Lastly, reliability is concerned with how consistent the source is with providing accurate, proven information.
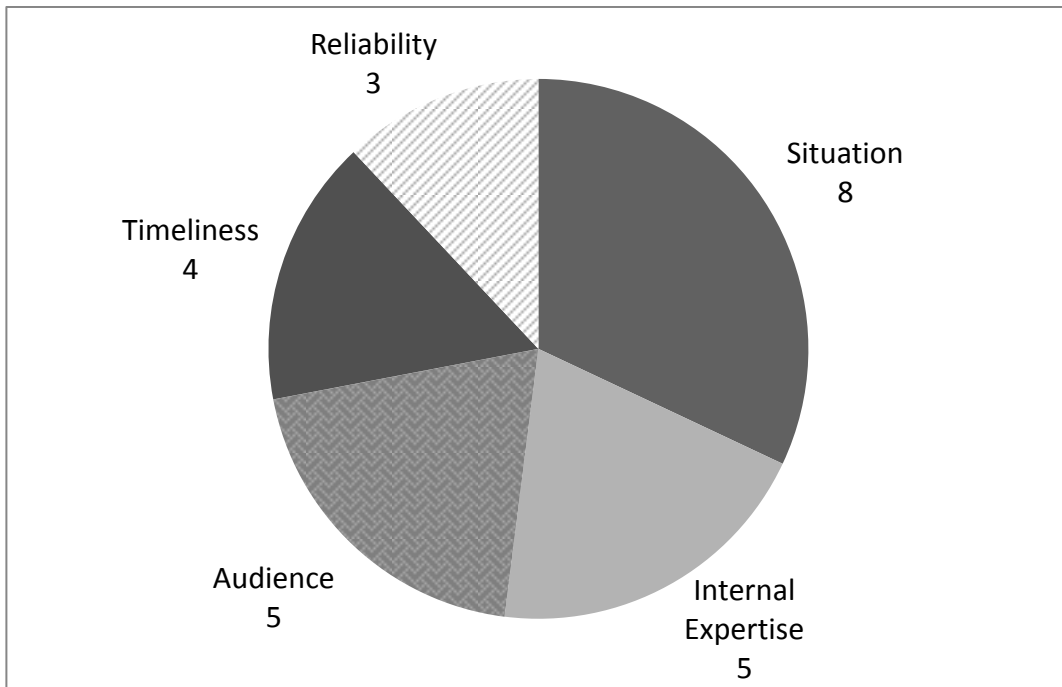
Figure 7 - Decision Criteria

Eight of the participants said that the source they required was based on the situation or the nature of the problem they encountered. The internal expertise of the individual or of their colleagues was mentioned five times. The intended audience for the knowledge had five instances as well. How quickly the participant can obtain a solution was a factor for four individuals. Lastly, the proven reliability of the source was mentioned three times. Three of the participants expressed that they didn't have a basis for their decision. On average, the participants only had one decision factor.

The quotes below provide typical responses for both situational and internal expertise categories, respectively:

"The situation does determine the source. So if I were trying to put together a business case for something and I need information on statistics or effectiveness on various programs I would probably go to academic sources so I could back up data with research. If I were to try to pull together content I would probably go to textbooks or popular media." (P 20)

"It would depend on the expertise of my colleagues so if I know that a colleague has certain expertise that I'm seeking information on I would go to them so I guess it depends on the issue that I'm investigating and the expertise related to that issue if I don't have those expertise." (P 13)

In terms of any discrepancies between consultants and government employees, government employees were slightly more likely (67% versus 44%) to mention theory and methodology as required knowledge. However, both sets of practitioners had the same response for current trends and specific industry or client knowledge at 33%. Additionally, the situation was the central factor for both consultants and government employees with a 44% and 50% response rate respectively. The only significant discrepancy in this question was while 33% of consultants decided based on their audience, none of the government participants did.

5.2. Knowledge Acquisition

In terms of **knowledge acquisition**, the specific sources that these practitioners accessed to perform their responsibilities were analyzed by type and method. Participants were asked to list what sources they access on a regular basis and were categorized in the following manner: 1) Ph.D. knowledge (i.e., knowledge acquired during the doctoral training); 2) academic journals; 3) academic books; 4) non-academic journals; 5) non-academic books; 6) non-academic conferences; 7) newspapers; 8) colleagues; and 9) internally generated knowledge (e.g., acquired during job training and working) (see Figure 8). Academic journals were mentioned most frequently with twelve practitioners stating they would access this source. Non-academic journals were the next highest accessed source with ten instances. On average, the practitioners would consult with three different sources. For example:

> *"So I guess I was to rank those I would draw knowledge from my academic training, so that's from my Ph.D. or Masters in HR and Industrial Psychology so that would be number one. We also looked at academic journals so that would be a key source. I would say others, people with expertise on the projects we're working on, that would be the third source. And then the last source would maybe be government training we received. So I guess it would be the four main sources."*
> *(P 6)*
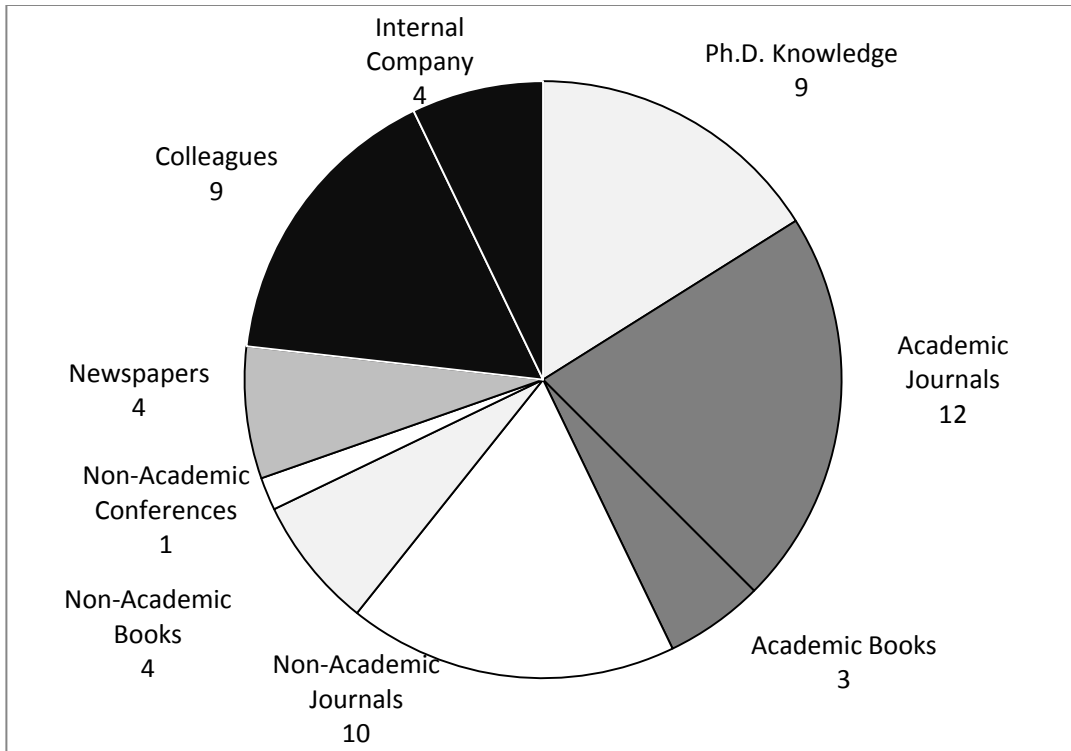
Figure 8 - Sources Accessed

In focusing on academic research, the participants were asked how they access academic findings. After reviewing the responses, it was clear that there were four different ways these practitioners access academic research (see Figure 9). Nine had access to databases and journal subscriptions through their employer. Five still had access through the academic institution they attended for their Ph.D. degree. Two participants said they had to ask former colleagues or classmates to obtain the research for them. Lastly, four individuals said they didn't have access to academic literature, and if they wanted to they would have to pay for it personally:

> *"Well it's not easily available, like Harvard Business Review would be a good source and I'll read it from time to time, it's expensive, and I'm at the early stages of my business and being able to buy academic, peer-reviewed journal articles is not something that I can afford. But if it was free I would certainly look at it." (P 10)*
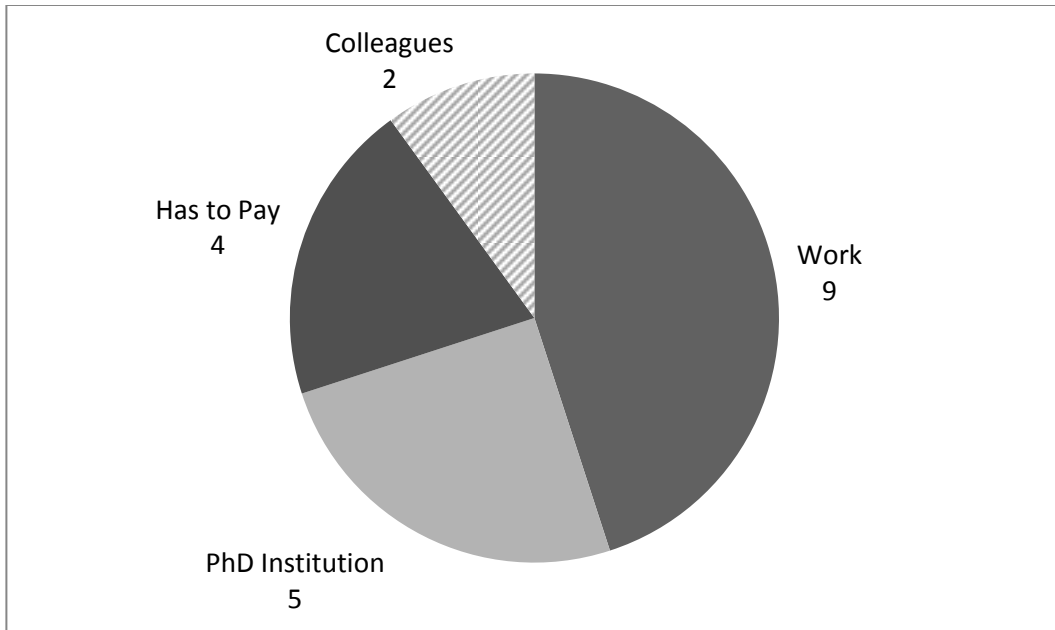
Figure 9 - Access to Academic Literature

Additionally, the participants specified whether or not they accessed academic literature on a regular basis to stay current with thought in academic circles (see Figure 10). Ten practitioners said they only access academic literature when they encounter a problem that requires it. Five responded that they did access academic literature on a regular basis. Because two participants never access academic literature, they were excluded from this question. Additionally, responses were not obtained for four participants. While many practitioners expressed their desire to access academic literature, most could not due to budgetary or time constraints:

> *"I aspire to that, but up to this point I haven't had time to do that. I've had this list ever since I started my Ph.D. of 'you should see what's going on in these journals on a regular basis' but I never do." (P 2)*

"Well it's funny because when you finish your Ph.D. you're all gung-ho about academic research and I definitely printed off articles but for the most part they sat there in my inbox because I didn't have time to read a lot of them. So, I would say yes I did try to stay up to speed, but ultimately what ended up happening was if it was relevant to a project, that's when I would definitely pull them out." (P 6)
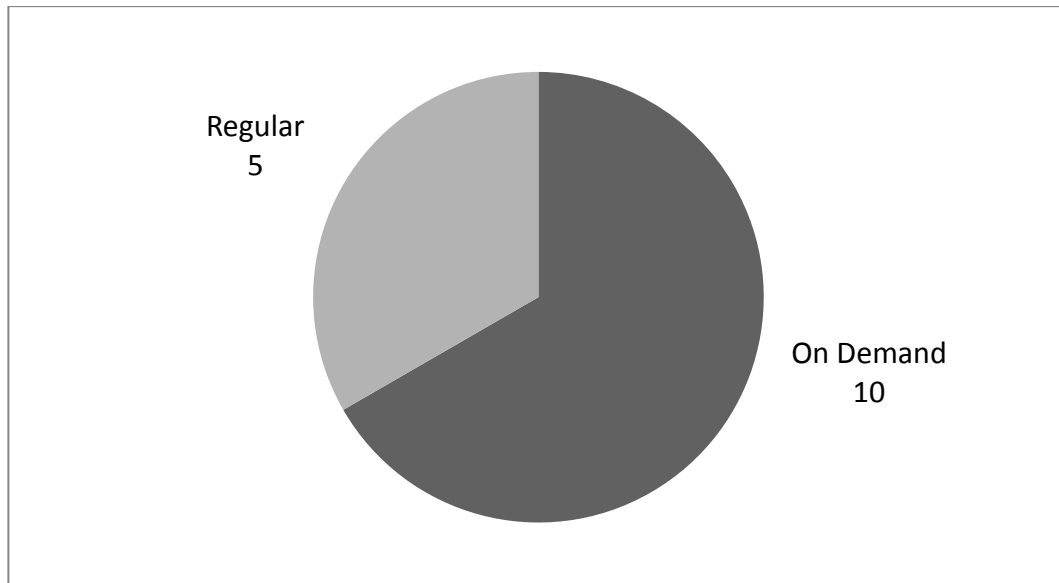
Figure 10 - Access of Academic Literature

Lastly, the participants were asked if the source of knowledge they access changes when they are faced with a critical or previously inexperienced situation (see Figure 11). Four practitioners said that they do not access different sources when there are special circumstances. The most popular response stating they would access their colleagues in this situation received seven instances.

"I would say what I learned in grad school and colleagues because sometimes I like to seek out the advice of people I work with if for instance it's a recommendation that is important… I would definitely seek out the advice of people who have been there longer than I have or people who may have more knowledge of a particular area." (P 12)
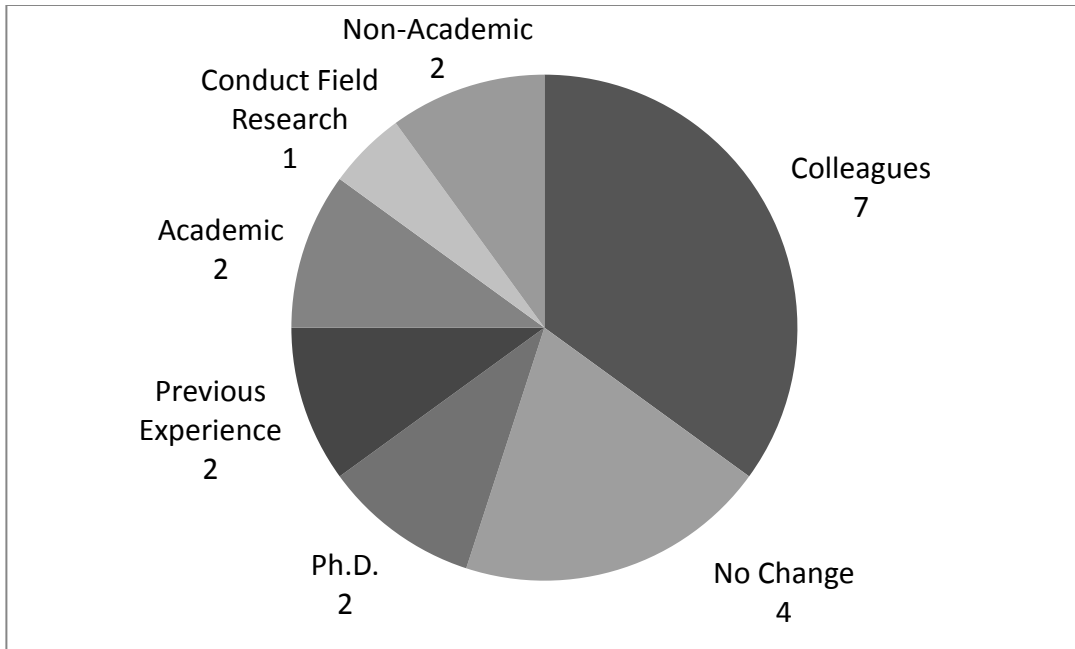
Figure 11 - Sources for Critical or Unique Decisions

In a comparison between the consultants and the government employees, one divergence is noted. While government employees all had access to academic literature through work, the only consultant with access to academic literature at work owned his or her own practice (see Table 1). Consultants had the largest barrier to accessing academic literature with two relying on colleagues and three having to pay personally out of eight responses.

Table 1 - Access to Academic Literature Responses

Access to Academic Literature	Consultant	Government
Work	1	6
PhD Institution	2	0
Colleagues	2	0
Has to Pay	3	0

5.3. Knowledge Transformation

The **knowledge transformation** stage in the knowledge transfer process involves converting the newly accessed knowledge into a useable form for its intended consumers. As stated in the literature, the knowledge should have an impact on the behavior and actions of the receiver. The participants were asked if when they accessed academic literature it contributed to the development of their knowledge base (see Figure 12**)**. Twelve participants stated that they gained new knowledge when they accessed academic literature. Four said that sometimes it was new and sometimes it was not. Three responded mentioned that academic literature did not contribute to their knowledge base. Lastly, two responses were not obtained. The following quote provides an example of why it did not lend new knowledge:

> *"Academic publications, unless they are still working papers they are a bit dated because it takes a while until they get published. So it's not really new information." (P 5)*

Additionally one participant expressed why he or she believed academic research provided new knowledge only some of the time:

> *"I'd say partially. My bias is that 90% percent of academic literature out there is rehashing and not contributing anything new to the field. And so I try to keep up with it but I'd say only 10% of it is providing me with new knowledge." (P 3)*
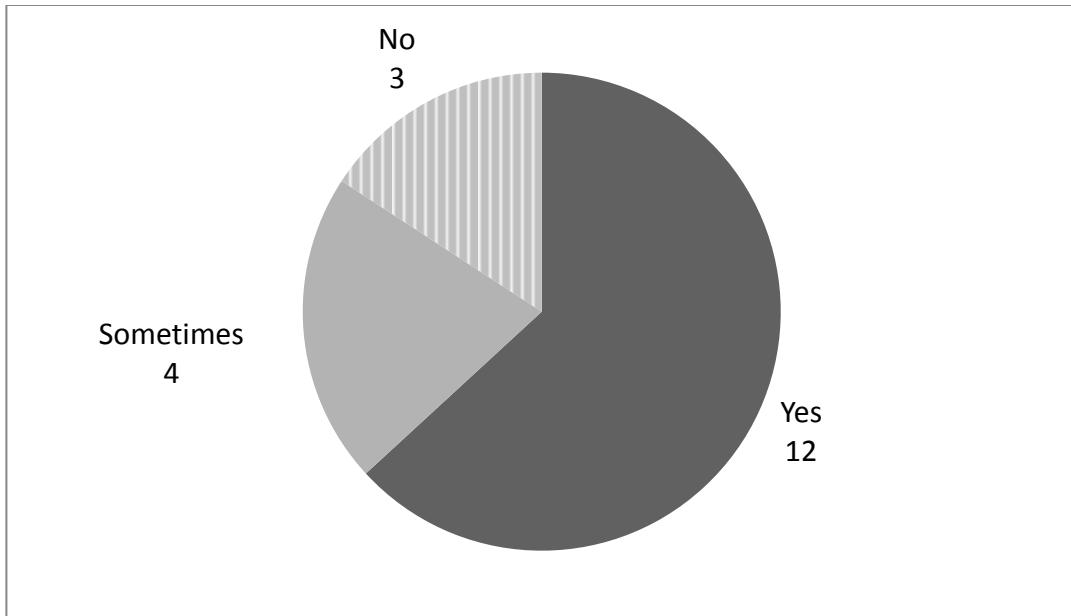
Figure 12 - Gain New Knowledge from Academic Literature

Additionally, the practitioners were asked if accessing academic literature had improved their skills or capabilities (see Figure 13). The results were slightly less encouraging than those to the previous question (i.e., if they gained new knowledge). Ten responded that accessing academic literature had improved a skill or capability in the past. Three said that this occurred sometimes, and six said that it did not. One participant said that he or she gained new knowledge from academic literature but that it did not enhance his or her capabilities provided an explanation of why there can be a difference:

> *"I guess my abilities are not influenced by academic research; my understanding of a particular area is what's improved with the academic research. So it doesn't necessarily change how I do things, it might change how I understand something." (P 14)*
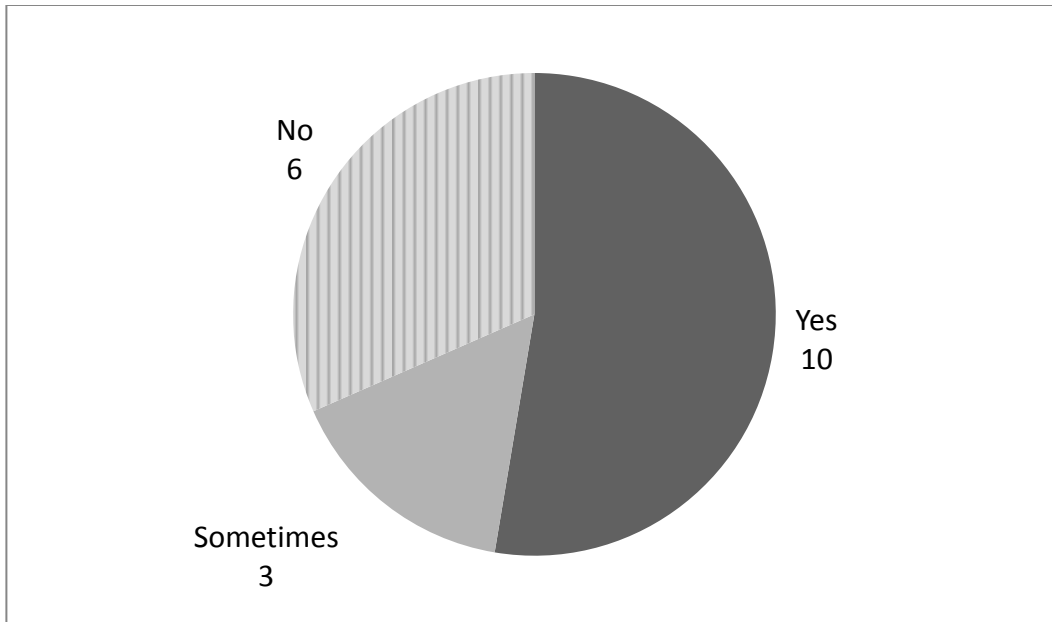
Figure 13 - Accessing Academic Literature Improves Skills or Capabilities

There are again a few differences between the responses from consultants and government employees. Five of the six government employees answered that new knowledge is gained by accessing academic literature and one said sometimes. In comparison, of the eight consulting responses three said yes, three said sometimes, and two said no (see Table 2).

Table 2 - Gains New Knowledge Responses

Gains New Knowledge	Consultant	Government
Yes	3	5
Sometimes	3	1
No	2	0

The results of the second question was almost unchanged for the consultants except that four responded yes, two sometimes, and two no (see Table 3). Conversely, government employees answered differently as three said yes, one sometimes, and two no. Therefore gaining new knowledge from academic literature does not necessarily mean that this contributes to the development of an

individual's skills or capabilities. At the same time, it may potentially improve a person's understanding of the situation, underlying factors, and related concepts that may be applied in the future.

Table 3 - Improves Skills Responses

Improve Skills	Consultant	Government
Yes	4	3
Sometimes	2	1
No	2	2

5.4. Knowledge Integration

The **knowledge integration** portion of the interview studied how the practitioners found academic research fit into his or her work environment by addressing organizational needs. The participants were asked to describe the general usefulness, applicability, and relevance of academic research in performing job related duties. The responses were categorized by: 1) yes, 2) only foundationally, 3) after considerable transformation, 4) rarely (see Figure 14). Five participants stated that academic literature is unconditionally relevant and applicable to his or her work responsibilities. Seven replied that academic literatures is relevant in creating the foundation for their knowledge but not for implementable recommendations Three of these practitioners do find relevance and usefulness in academic knowledge but it requires extensive transformation in order to be applied. Lastly four participants replied that is was rare that he or she is able to apply academic knowledge based on its lack of relevance or usefulness. One participant expressed how academic research required conversion:

> "It's applicable but I would have to take the time to convert it into
> something...so it's applicable at a conceptual level, less at a
> pragmatic level. If I just want to analyze the why and the how, from
> an analytical perspective it's very helpful, but less so if I need
> something that I can use right away." (P 16)

Another commented on how important academic literature is to accomplish his or her responsibilities:

"Totally relevant and necessary, I could not do my job without academic sources."(P 7)
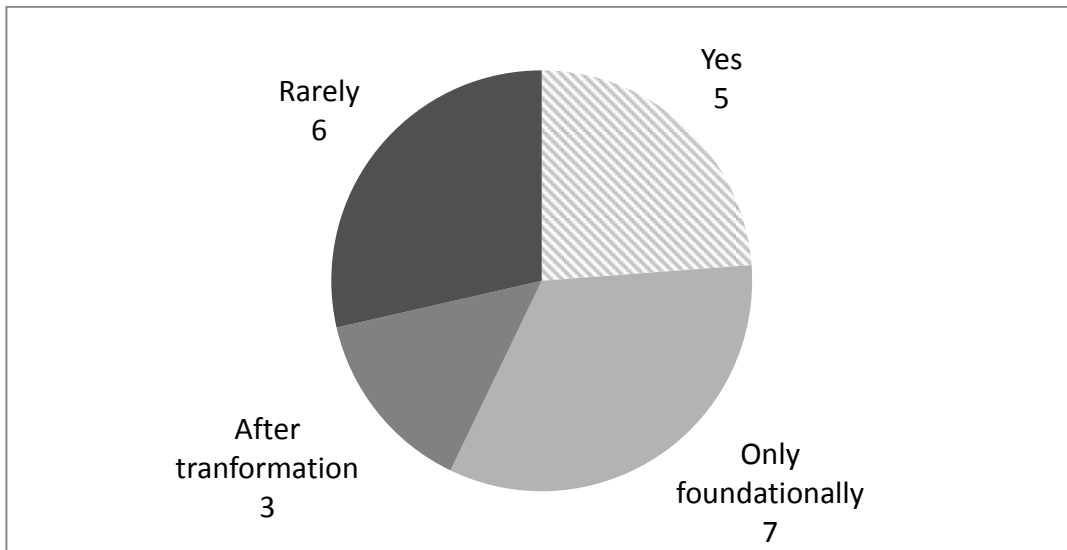
Figure 14 - Usefulness, Applicability, and Relevance of Academic Literature

Many of the participants answered that the applicability and relevance of academic research is based on certain conditions, which included language, sample type, scope, and intended audience. Additionally, in a comparison between the nine consultant participants to the six government participants, only one consultant said that academic knowledge is relevant and applicable to his or her working environment whereas three government employees said yes (see Table 4). Correspondingly, four of the consultants and one government employee said that academic literature rarely provides relevant and worthwhile material for him or her to utilize.

Table 4 - Usefulness of Academic Knowledge Responses

	Consultant	Government
Yes	1	3
Only foundationally	2	2
After transformation	2	0
Rarely	4	1

5.5. Knowledge Application

Knowledge application occurs when the transformed knowledge is utilized to address the current problem the practitioner has encountered. In this stage in the knowledge transfer process the practitioners acted upon the new knowledge they obtained. The participants were asked how frequently they applied academic literature and the responses were categorized as: 1) regularly; 2) sometimes; 3) rarely; and 4) never (see Figure 15). Six of the participants replied that they regularly use academic literature to perform their responsibilities at work. Seven answered that they sometimes used academic material. Lastly, six rarely used academic content, while two never did. For example, a practitioner expressed his or her enthusiasm in applying academic literature:

> *"I am the type of person who if somebody gives me something that I find interesting and I will spend the next three weeks telling everybody about it and trying to apply it all over the place, which I'm kind of known for." (P 11)*

Another described how it is useful when he or she needed to provided substance to a recommendation:

> *"It's not front it's not what I go to lead the way, it's what I use to substantiate or provide reference material or… in either making recommendations or commenting on something." (P 1)*

Lastly, one participant who never used academic literature described the deterrents he or she faced:

> *"A couple of things, number one the demands of the job in the private sector it's about productivity, you're not measured by how many articles you are going to read… you are measured by how many hours can you… have you been on a client. So based on how you are measured, your behaviour changes and so if the culture of the firm doesn't support you to read all of the academic articles to see what ideas and what is the latest thinking… there's not many firms that pay you to do that. So by default then you don't do it."* (P 9)
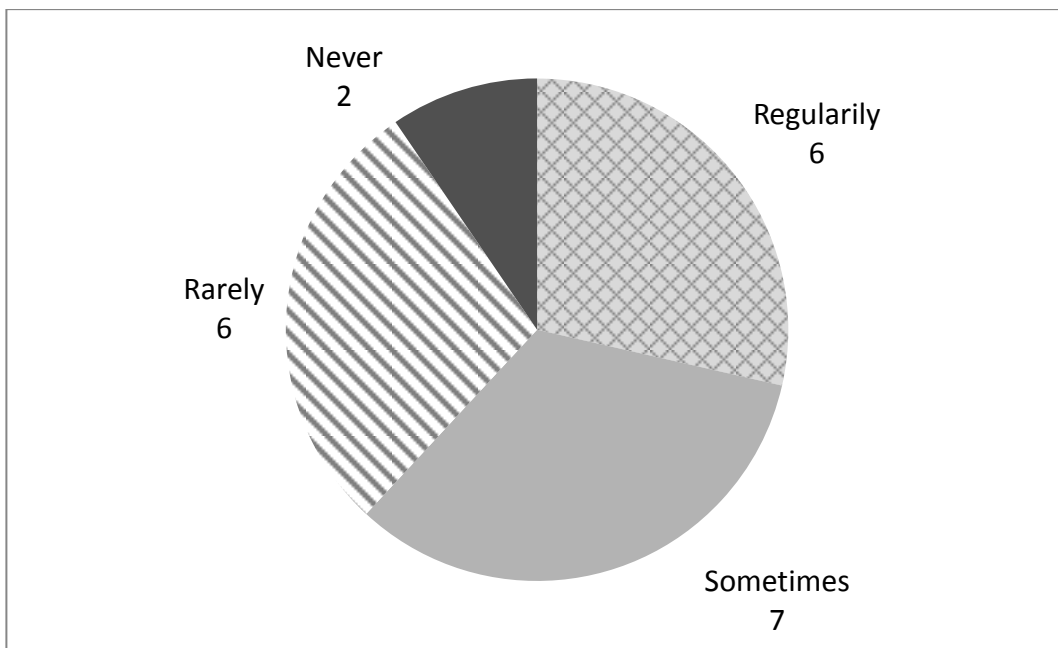
Figure 15 - Practical Application of Academic Literature

The participants were also asked if their company or clients recognized the value in applying academic research to solve managerial problems. The responses were coded as: 1) yes; 2) sometimes; and 3) no (see Figure 16). One consulting participant explained how his or her clients would appreciate the application of

academic knowledge because it increases the validity of the recommendations made:

> "I think there is an appreciation of the face validity that that would
> bring to the advice that you provide. In terms of that information is
> valid and we can believe that that is true." (P 19)

Contrariwise, another consultant stated that his or her use of academic knowledge could achieve the opposite effect:

> "Nobody would ever [care about the inclusion of academic
> knowledge], in fact you could reduce your credibility if you heavily
> reference your findings." (P 21)
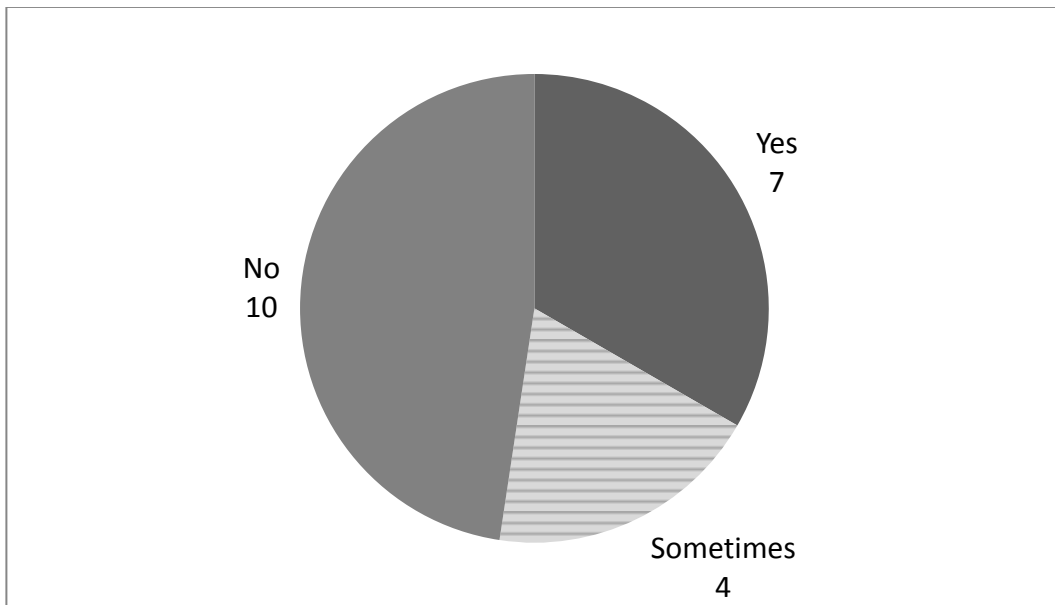
Figure 16 - Client or Company Values Applied Academic Knowledge

Yet again there is a stark contrast between the answers provided by the consultant and government participants. Only one consultant (11% of the population) versus three government employees (50%) affirmed that they apply academic knowledge on a regular basis. The majority (56%) of consultants revealed that they rarely applied academic knowledge (see Table 5).

Table 5 - Practical Application of Academic Literature Responses

| Practical Application of Academic Literature	Consultant	Government
Regularly	1	3
Sometimes	2	2
Rarely	5	1
Never	1	0

Additionally, there was a difference in whether or not the participants believed that their company or clients value the application of academic knowledge because most consultants stated that it was not valued (see Table 6).

Table 6 - Company or Clients Value Academic Knowledge Responses

Company or Clients Value Academic Knowledge	Consultant	Government
Yes	2	2
Sometimes	1	2
No	6	2

5.6. Knowledge Retention

Knowledge retention ensures that the academic knowledge acquired and utilized by practitioners is embedded in the organization for future consultation and action. For knowledge to be retained, it must have a lasting impact on the individual's or company's behaviour. The participants were asked if they see themselves as translators of academic research by making academic knowledge usable for those who would not be able to attain it themselves. The replies were: 1) yes; 2) sometimes; or 3) no (see Figure 17). Nine of the participants acknowledge that they will transfer academic knowledge to others who do not have a Ph.D. degree. Five said that sometimes this knowledge transfer occurs. Typically, this transfer would depend on the time constraints placed on the

participant and the receptiveness of the knowledge recipient. Lastly, seven stated that they do not transfer academic knowledge to others. For instance, one participant discussed how he or she transfers academic knowledge and the challenges to overcome in this effort:

> *"I'm using it, and people know it, but I will translate. I would use it by translating it and I would definitely not hesitate to use what I have learned here as long as I can make it understandable and useful for my colleagues. I will give you an example, in the academic environment in literature, we're talking about commitment and then we're talking about this topic has been highly researched. And it gets to very more detailed terminology like employee commitment, supervisor commitment… I don't see myself talking about these definitions here, because people won't follow me. So I need to stay broad, talking about commitment, but not going with all the refinements that we can have in the literature, this is where I will lose them. I need to use this knowledge but not go as deeply as academic knowledge will do." (P 4)*

Another mentioned that educational differences did not create an unbridgeable gap:

> *"It's not that they weren't intelligent; they were just maybe a different level." (P 15)*
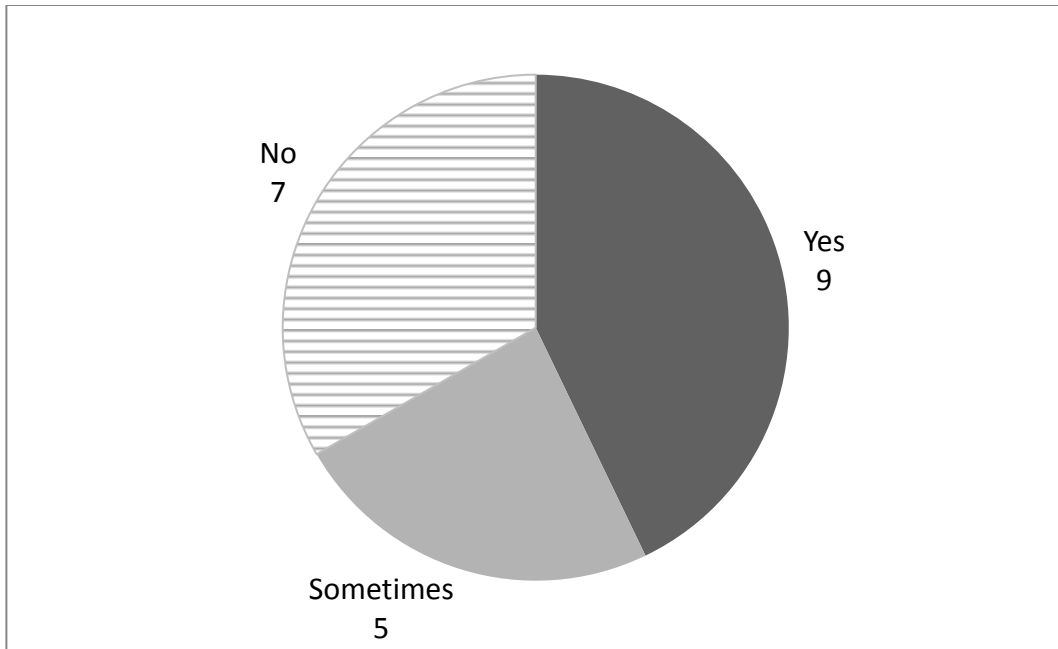
Figure 17 - Transfer of Academic Knowledge

The majority of government employees replied that they transfer academic knowledge to others with a 67% response rate. In comparison, only 33% of consultants believed they perform this function, and 44% said that it can occur sometimes (see Table 7).

Table 7 - Transfer of Academic Knowledge Responses

Transfers Academic Knowledge	Consultant	Government
Yes	3	4
Sometimes	4	1
No	2	1

5.7. Demographics

The participants were also asked a variety of demographic questions to establish whether they were still connected to the academic society. The first question was if the participant had published in an academic source since obtaining a Ph.D. degree. Only seven of the 21 practitioners replied that they had since been published (see Figure 18). It should be noted that five of the six participants who regularly use academic knowledge were published since obtaining their Ph.D. degree.
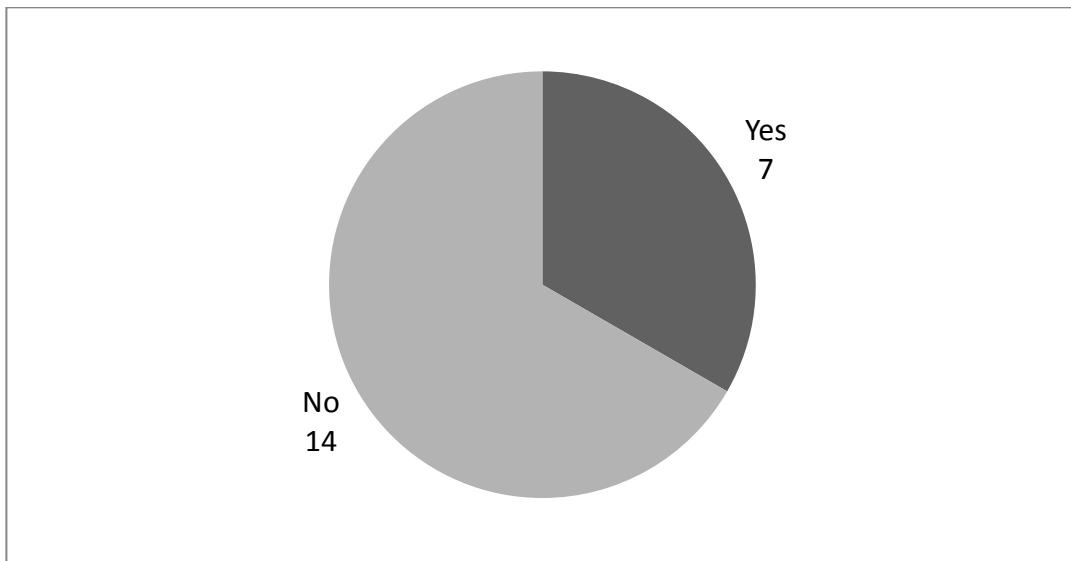
Figure 18 - Published in an Academic Source

Next, participants stated if they had taught at a college or university since graduation (see Figure 19).
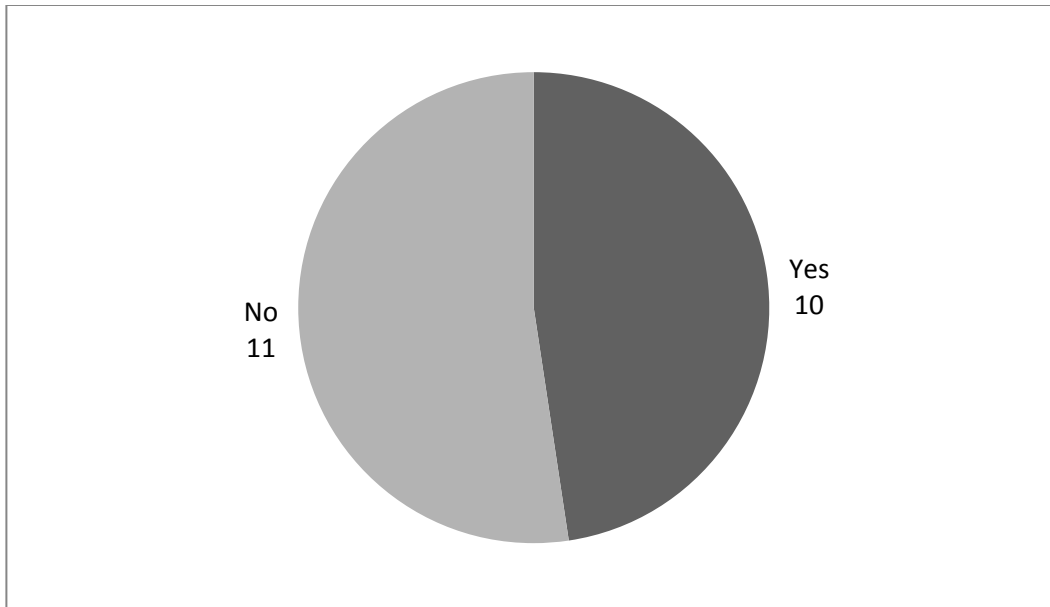
Figure 19 - Taught at University or College since Graduating

These responses were compared to each participant's frequency in applying academic knowledge which revealed that teaching could increase the likelihood of an individual using academic literature (see Table 8).

Table 8 - Teaching Compared to Use of Academic Knowledge

	Regularly	Sometimes	Rarely	Never
Yes	3	6	1	0
No	3	1	5	2

Additionally, each participant was asked if he or she has plans in the future to pursue a full-time academic position. The practitioners' responses were: 1) no; 2) when they retire; 3) unsure; and 4) already decided (i.e. he or she had since applied for a full-time academic position) (see Figure 20). The most popular reply with nine instances was that the participant had no desire to become a full-time academic. Five were undecided if they would change career direction in the future. Four stated that they would like to work in an academic capacity upon retirement from their current position. Lastly, three participants had already decided to pursue a full-time academic position.
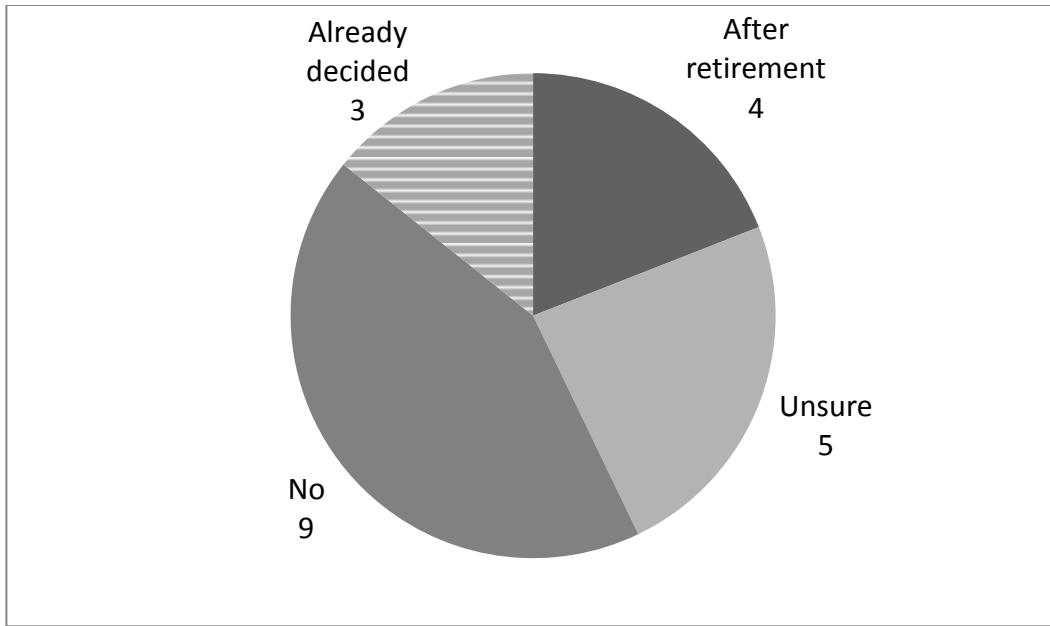
Figure 20 - Future Full-Time Academic Plans

Again, the responses were compared to each participant's frequency in applying academic knowledge which did not reveal any relationship (see Table 9).

Table 9 - Future Academic Plans to Use Academic Knowledge

	Regularly	Sometimes	Rarely	Never
Retirement	2	1	1	0
Unsure	0	2	2	1
No	3	2	3	1
Already decided	1	2	0	0

5.8. Interpretations

An analysis of the data found that there are a number of indicators which allude to the likelihood of a practitioner with a Ph.D. degree accessing, applying, and transferring academic knowledge. Interestingly, when the participants' use of academic literature was compared to the types of knowledge he or she perceived as necessary in the knowledge awareness step there was not a relationship. For example, while consultants initially stated that they used theory often in their work, they do not access academic research often. It was established that these individuals rely on the academic knowledge they gained during their Ph.D. programs. There was also no connection between a participant's subscription to an alert tool and the use of that knowledge source. This can be linked to another finding that the majority of the participants do not consume academic knowledge on a regular basis. These practitioners access academic literature on demand to solve a specific problem they encountered. The findings in this study echo Thompson (2009) that knowledge transfer models must focus on the receiver and not solely on accessibility since accessibility does not guarantee action.

The situation or problem encountered by the practitioner was the most influential decision criteria in the choice of which knowledge source to consult. There was no pattern observed in this criterion corresponding to the use of one source over another. However, the audience to which the practitioner presented his or her recommendations greatly impacted the sources the practitioner employed. If the audience required evidence-based knowledge then academic research is more likely to be used. However, this requirement for proven knowledge was the exception not the rule. The audience typically demanded knowledge which was directly applicable to the specific situation at hand and is not concerned with the 'why' of an underlying situation - which is the essence of academic research. Concurring with the findings of Pfeffer and Sutton (2006), the practitioners valued knowledge that was generated by individuals such as themselves or their own experiences over tested knowledge. Furthermore, academics are not always seen

as credible sources because of their lack of practical experience and they are viewed as not being able to understand situations outside of a lab setting. This result coincided with the findings by Jacob (2001) and Rynes et al. (2001) that practitioners ignore the research provided by academics.

The fact that these practitioners value pragmatic and current knowledge from individuals who have personally experienced a similar situation and are familiar with the practitioner environment may be attributed to social identity theory. First explored by Tajfel and Turner (1979), social identity theory explains how an individual's self-concept can predict behaviour. Stemming from social identity theory is in-group preference where individuals favour the group they identify with over out-group members (Sachdev & Bourhis, 1987). This in-group and out-group preference is supported by the fact that the practitioners who were published or taught at an academic institution were far more likely to use academic research on a regular basis. Therefore, they were more likely to self-identify as a member of the academic society while practitioners who do not have this connection might see academics as an out-group.

One of the strongest indicators of the probability of an individual accessing and applying academic literature is whether or not his or her clients or company values academic knowledge. If the client or company does not value academic research, the likelihood of the practitioner referencing the material declines. One reason why this relationship could exist is that if the participant's employer does not value academic content, than it will not pay for the practitioner to have access to this material. This implication is somewhat similar to Siegel, Waldman, and Atwater (2004) findings that cultural misunderstandings inhibited licencing agreements between academics and practitioners. Some reasons why academic content is not seen as valuable included a lack of relevance, the scope of the research, and language. Additionally, as stated by many of the participants, it took considerable time and effort to convert academic knowledge into a form that is consumable for other users. This is partially attributed to the absorptive capacity

and the responsive capacity of the organization as identified in the capacity-based model of knowledge transfer (Parent et al., 2007). As was found in the study by Cohen and Levinthal (1990) the absence of these capacities inhibits knowledge transfer within an organization. Therefore, there is no motivation for these practitioners to undertake this effort if it is not appreciated or recognized as valuable. The manner in which an individual's performance is measured greatly impacts what activities he or she allocates time to. This finding is intuitive and is supported by literature (Holloway, 2001).

One interesting divergence of results occurred in the sample of participants who worked in the financial sector. The one individual who did use academic literature on a regular basis and transferred academic content to others was in a managerial position and responsible for forming organizational strategy. The other two participants were in a fund analyst position and responsible for recommending and administering financial funds. Therefore, the opportunity for the incorporation of academic theory into the practitioner's actions depended on his or her responsibilities in this case.

5.9. Answers to the Research Questions

The overall purpose of this study was to investigate what knowledge sources practitioners with a Ph.D. prefer to incorporate into their decision making process and take action. It was revealed that the doctoral graduates acquire new knowledge through a variety of channels. The most popular format was academic journals, followed by practitioner outlets. The next most common sources were the knowledge these practitioners received during their Ph.D. degree and through discussing with colleagues. As illustrated in the case of the consultant participants, if there is a barrier to the access of academic literature, the likelihood of the individual utilizing this source diminishes.

Additionally, this study explored to what extent these practitioners utilize academic knowledge in their work as well as transferring its content to others.

While academic knowledge was not habitually applied by every participant, it did have a lasting impact on those individuals who regularly utilized this material. All but two of the participants referred to academic material to some extent. In most instances, academic literature was accessed in response to a problem encountered, as staying current with academic thinking was simply not feasible.

Lastly, the extent to which these practitioners act as an intermediary between academia and practice was examined. It was discovered that while there are some deterrents to the Ph.D. graduates behaving in this fashion, that included the perceived lack of value of academic research from peers and clients, the practitioners can still fulfill this function. Additionally the participants outlined areas academics can assist in their efforts to make academic research applicable to their work environment such as rich executive summary and a more generalizable sample population. The exception to this was the meta-analysis. These analyses were noted for an ability to lend value to practitioners due to a summative nature. In conclusion, there is a strong argument for the academic society to maintain contact with doctoral graduates because it increases the probability of these practitioners consuming, implementing, and transferring academic knowledge.

6. Implications

The findings of this study have implications for theory, practice, and policy.

6.1. Implications for Theory

The results of this study support and further develop current literature in the realm of knowledge transfer. The addition of the retention stage in the process-based model of knowledge transfer incorporates relevant theory regarding knowledge and how it should impact the behaviour of the receiver. Additionally, the findings of this study contribute to understanding indirect knowledge dissemination channels and how intermediaries process knowledge for the consumption of others. Particularly, this study empirically demonstrates that doctoral program

graduates who join the non-academic sector upon graduation promote the dissemination of academic knowledge.

6.2. Implications for Practice

One implication for practice is that there must be a greater demand and appreciate for evidence-based knowledge. The current organizational cultures outside of the public sector are not conducive to a practitioner accessing and applying academic literature. These results enhanced understanding of the factors that affect a doctoral business program graduate's likelihood of acquiring, utilizing, and disseminating academic knowledge. Second, implications from this study would be relevant to the education of business doctoral program graduates. As revealed in this study, these graduates can be valuable knowledge distribution channels that can enhance the productivity and quality of an organization. Therefore, they should be prepared with the skills and experiences during their education necessary to act as an intermediary that promotes the benefits of academic literature. Third, organizations employing doctoral degree holders should consider providing them with access to academic literature, which may improve their decision making. Most importantly, these individuals may act as knowledge ambassadors to deliver academic knowledge to their colleagues and present it in an appropriate format. This, in turn, may improve overall organizational performance. Particularly, this is an important issue for consulting companies, which, in contrast to public organizations, rarely provide their employees with access to academic material.

6.3. Implications for Research Policy

Recently, the role of the academic institution was questioned regarding its responsibility with respect to the accessibility and distribution of academic research. One important finding from this study is that the characteristics of academic research identified as a barrier by these practitioners are important criteria for an academic to publish in a scholarly journal. This includes a narrow

scope, limited generalizability, language, and the sample population. If academics were to present their research to accommodate practitioners, they would never be published in academic journals. As this is a significant aspect of an academic's performance evaluation, it doesn't make sense for them to do this – therefore, it is not aligned between the stakeholders. While some participants believed these institutions should be changing to address what industry values, others argue this is not, and should not be the function of universities, echoing the debate in academic circles. However, it is unclear if an academic institution or academic journal can be sustainable if it does not fill industry's need for knowledge – can it be a self-sufficient industry with academics publishing solely for themselves? With consultants increasingly be viewed as a viable alternative for academic knowledge dissemination, this is becoming an urgent matter for policy makers.

In addition, considering an increasing competitiveness of an academic job market around the world, more doctoral business program graduates will join the non-academic sector in the future. Therefore, they need to receive not only theoretical but also applied knowledge during their doctoral training. Particularly, an ability to convert academic findings to actionable items should be strongly emphasized. For this, changes to the academic curricula are required at both institutional and national levels.

7. Conclusions, Limitations, and Directions for Future Research

This study provided insight into an individual's perception and value of academic research. However, the results and implications of this study are tempered by a few limitations. First, the snowball data collection method restricts the generalizability of the results (Brewerton & Millward, 2009). Second, the findings may not be generalizable to practitioners who are graduates of doctorate programs that are not business-oriented (Creswell, 2003). Last, the limited sample size

allowed this study to explore the research questions, but not draw firm conclusions.

This study highlighted the importance of academia at maintaining a positive relationship with practitioners because this impacts the reception of academic literature. Ph.D. graduates have the potential to become a powerful tool for academic institutions to employ in the quest for relevance. Further research should investigate the characteristics of academic literature that is consumed by practitioners such as the author's experience, and the editorial policies of the source, to further understand how to create literature that is usable for these practitioners.

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Appendix I – Interview Questions

Demographic Question Set #1

- What is your current job title and responsibilities? In what industry?
- What sort of knowledge do you seek on an average day?
- If you were to describe the type of knowledge do you create on an average day, how would you do it?

Knowledge Awareness

Question #1: How do you decide what source of knowledge to choose to solve each managerial problem? In other words, does your selection of knowledge sources depend on the nature of the problem?

Probe #1: What way of gaining new knowledge have you found most beneficial?

Question #2: Do you use specific tools to make you aware of new knowledge that is available to be consumed?

Knowledge Acquisition

Question #1: In your daily work you probably come across situations when you need credible sources of knowledge. Please, list in order of importance, sources of knowledge you use in your daily work.

Question #2: Sometimes, you might need to have a valid justification for a very critical or unique decision. For example, you might have come across a unique problem or novel situation when you did not know what to do. What sources of knowledge do you use in those special (i.e., very important or new) situations?

Probe #1: Do you use knowledge that you learned in your PhD program? Your MBA/Management program?

Probe #2: Do you use academic journals, practitioner journals, books, or the Internet?

Which journal titles do you use most frequently?

Do you have access to academic research? How do you access it?

Do you read academic literature regularly or do you search for a particular topic only when you need it?

If you don't use academic publications, why not?

Do you attend academic/practitioner conferences? If yes, which ones? If not, why not?

Probe #3: Do you frequently use knowledge from your colleagues?

Knowledge Transformation

Question #1: With respect to your job, do you gain new knowledge by accessing academic literature? Does this new knowledge improve any of your existing skills or capabilities?

Knowledge Integration

Question #1: Can you comment on the general usefulness, applicability, and relevance of academic knowledge in aiding you in your daily work?

Knowledge Application

Question #1: How frequently do you utilize academic knowledge to benefit you and your organization?

Question #2: Can you give me a few examples when you applied academic knowledge in your daily work? What were the outcomes and benefits for you and the company?

Question #3: Have your company or clients ever recognized the value of applying knowledge from academic publications? If yes, can you offer an example of this?

Knowledge Retention

Question #1: In your work, do you communicate or transfer your academic knowledge to your colleagues who don't have a PhD degree? **Can you see yourself as a translator of academic knowledge?**

Demographic Question Set #2

- When did you graduate from your PhD program?
- After getting your PhD, have you taught part-time or full-time at a college or university?
- What area was your PhD in?
- Have you published any work after obtaining your PhD?
- What area was your Master's degree in?
- Do you have any plans to get a full-time academic position in the future?