A Seven-Step (7q) Model for Exploring Philosophical Underpinnings in Research Methodology: Implications for Doctoral Research in Social Science
A SEVEN-STEP (7Q) MODEL FOR EXPLORING PHILOSOPHICAL UNDERPINNINGS IN RESEARCH METHODOLOGY: IMPLICATIONS FOR DOCTORAL RESEARCH IN SOCIAL SCIENCE

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Abstract

Research philosophy exerts significant influence on research approaches, strategies and methodologies. The philosophical stance of a researcher, especially in doctoral studies, justifies the validity of final research outcomes. An in-depth understanding of the philosophical assumptions enables a doctoral researcher to craft a comprehensive research plan ranging from research questions to appropriate method of data analysis. This paper proposes a seven step model for exploring philosophical underpinnings in doctoral research, particularly for social science research area. The model is based on seven basic questions that a researcher must answer to build up a connection between research question and research method in more concrete manner. Implications of the model for doctoral research are outlined in the paper. Being one of very few studies focusing on philosophical understandings from doctoral studies perspective, this study is expected to benefit academics, novice researchers, post-graduate students, and more importantly the doctoral students to a large extent.

Key Words: 7Q Model, Doctoral Research, Research Philosophy, Research Methodology, Research Paradigms, Social Science Research.

1. BACKGROUND AND JUSTIFICATION

Being the highest level of academic excellence, doctoral research is primarily expected to provide answers across the continuum of research that adds value to the existing stock of knowledge on an incremental basis within respective research discipline. In addition, a rigorous doctoral program enables a researcher to acquire skills needed in independent scientific research work. These underlining expectations concerning doctoral research work requires an extensive level of philosophical understanding. Indeed, a Ph.D. researcher works within a philosophical framework. The importance of philosophy in research is obvious to justify the findings and conclusions made in the doctoral studies. Moreover,
philosophical assumptions used in doctoral studies are critical to seeking answers to
the research questions (Jackson, 2013). Accordingly, philosophy is the foundation of
all research projects (Hunt & Hansen, 2011). The research philosophy that a
researcher adopts specifies his or her views of the world that will ultimately underpin
research strategy and methods (Saunders et al., 2012). The misalignment between
methodological approach and philosophical stances creates confusion throughout the
whole research process (Knox, 2004).

Despite this significant importance of research philosophy, doctoral researchers are
very much confronted with a dilemma in making a solid philosophical stance in their
studies. Conceptual pluralisms of different philosophical terms and lack of adequate
knowledge about philosophy are largely responsible for this dilemma.

Moreover, notable disparities are observed in doctoral dissertations in the use of
philosophical perspectives, especially in social science studies (Nicholls, 2005). Mc
Manus et al. (2017), for instance, investigated 120 Ph.D. dissertations published in
Irish business school repositories and found 8 dissertations (relating to finance and/or
financial markets) with no mention of researcher’s philosophical underpinnings
and/or any reflection on their own worldview. Surprisingly, they attained the title of
Doctor of Philosophy! Thus, research philosophy remains unaddressed in doctoral
research to a large extent.

The case is more acute in developing countries like Bangladesh where higher
education is on the rise. Although the coursework for M. Phil and Ph.D. students
consists of research methodology in many cases, very little or no reference is made
to the contents of research philosophy. Among those who intend to use philosophical
assumptions in their dissertations and theses, most of the doctoral researchers fail to
make the right methodological decisions due to the multiple propositions of
explanation and research paradigms (Sefotho, 2015). In addition, the existing
literature is inadequate for addressing philosophical underpinnings in doctoral
research (Crossan, 2003; Mills & Birks, 2014). In many cases, existing literatures
pertaining to research philosophies are not easily understood by novice researchers
like Ph.D. students (Baldwin, 2014).

In light of this scenario, we propose a seven step model (7Q model) for exploring
philosophical underpinnings in research methodology with special reference to
doctoral research in social science. This model explains the basic philosophical
underpinnings and their subsequent implications in research methodology. The
model links up three critical components of doctoral studies: philosophy, research
strategy and methodology. Since the dilemma mainly arises due to the lack of a good
command of philosophical concepts and principles underpinning research (Pathirage
et al., 2011), the constructive discussions based on the proposed model are expected
to remove Ph.D. researchers’ dilemma to a large extent.
2. PURPOSE AND STRUCTURE

The main objective of this paper is to propose a seven step (7Q) model for exploring philosophical underpinnings in social science research. More specifically, the objectives of this paper are: (1) to provide a comprehensive model to explore the philosophical assumptions in social science studies; (2) to justify the rationale of adopting research philosophy in doctoral research; (3) to highlight the relationship between research philosophy and methodology; finally (4) to provide implications of the 7Q model for the research community at large.

In response to the above stated objectives, this paper is organized into four consecutive and related sections. We begin with a brief description of the rationale of conducting such a study, especially a comprehensive model addressed to assist the doctoral researchers. Then, we highlight the relationship between philosophy and social science research in brief. Next, the proposed 7Q model is consistently discussed. Finally, the paper is concluded with the implications of the proposed model for academics and research community in general and Ph.D. researchers in particular.

3. PHILOSOPHY AND RESEARCH

In this section of the paper, we deal with two basic questions. First, how has philosophy been emerged as a core issue in research in various disciplines, especially in the doctoral dissertations? What is the basic relationship between philosophy and research? Philosophy has been practiced over 2000 years by mankind (Kamber, 2011), and thus it has gained universal validity (Vidal, 2007). In essence, philosophy has occupied a central place in other disciplines and termed as applied philosophy such as philosophy of science (Siegel, 2013), philosophy of religion (Wainwright, 2005), philosophy of mathematics (Russell, 2008), philosophy of language (Lycan, 2008), philosophy of education (Noddings, 2011), and so on. The term philosophy was originated from Greek word φιλοσοφία (philosophia) which literally means "love of wisdom" (Wikipedia). Philosophy is dealt with nature of reality, knowledge, values, reasoning, mind, and language (Teichmann & Evans, 1999). Historically, philosophy was related to any body of knowledge like religion, mathematics, natural science, education and politics. Accordingly, philosophy has become central issue in today’s social science research, especially in regard to justify the researchers’ points of views. The understandings of philosophy and its fundamental principles have become critical in social science mainly in qualitative research (Tang, 2011).

Germany was the first country to include philosophy into doctoral research what we now term as the doctorate of philosophy (Ph.D). This country introduced Ph.D. as the terminal teacher's credential in the 17th century (c. 1652) and one of the first Ph.D.
holders was Erhard Weige who was a German mathematician, astronomer, and philosopher (Wikipedia). However, the proper citation was not found from Wikipedia in this regard. Since then, the term doctorate of philosophy (Ph.D) has been popularized in all disciplines and research outcomes are now subject to philosophical stances of the doctoral researchers. Now-a-days, a Doctor of Philosophy (Ph.D) is the highest academic qualification awarded by universities across countries (Johnson, 2001; Bourner et al., 2010). Arguably, the inclusion of the word ‘philosophy’ in the title of Ph.D. implies the greater stance of philosophy in the doctoral research. A doctoral researcher is, therefore, inevitably required to develop a sound understanding of philosophical assumptions and their impacts on research process. Some of the studies (e.g., Pring, 2012; Mkansi & Acheampong, 2012; Sefotho, 2015; Knox, 2004; Efinger et al., 2005; Mitcham, 1998) highlighted the importance of bringing philosophy into research to resolve the problems of inter disciplinary integration (Evely et al., 2008). Interestingly, in recent time, philosophy is even applied to nanomedicine (Oftedal, 2014).

Now-a-days philosophy and research are closely integrated and difficult to separate. This ultimately has led to the development of the term ‘Research Philosophy’. Research philosophy is undoubtedly useful disregarding natural or social science research (Bahari, 2010). Failure in crafting suitable research philosophy seriously affects the quality of research itself (Easterby-Smith et al., 2002). Research philosophy refers to a researcher’s philosophical stance in a study in terms of reality, knowledge and value. It is the research philosophy that portrays the assumptions that a doctoral researcher views the world. The philosophical assumptions affect both the research approach and research strategy. Hence, understanding research philosophy is very much important for a doctoral researcher for three distinct reasons: (i) to clarify research design (Easterby-Smith et al., 2002), (ii) to ensure that research outcomes are appropriately and meaningfully interpreted (Moon & Blackman, 2014), and (iii) to explore the critical insights or meanings of human affairs related to research questions.

A seven-step (7Q) Model for Exploring Philosophical Underpinnings in Research Methodology: Implications for Doctoral Research in Social Science

Figure 1: Philosophy’s place in the Research Model

According to Lee and Lings (2008), the ultimate objective of research is either to create knowledge or to add evidence to our exiting knowledge. As stated in figure 1, philosophy affects how we can relate theoretical knowledge to the real world as well as how we can transfer knowledge of the world back to theory. Hence, three philosophical assumptions of a doctoral researcher are critically important: (1) personal belief about the nature of reality (ontology), the acceptable knowledge (epistemology) and the value in research process (axiology). Thus, there are three wings of research philosophy: ontology, epistemology, and axiology. These three philosophical bases influence the choice of research approach, strategies, and methods.

4. THE PROPOSED SEVEN STEP (7Q) MODEL

The proposed 7Q model (Q stands for questions) consists of seven distinct steps that provide an account how philosophical assumptions affect research process in social science. We progress the discussions of the model based on seven basic questions. The model starts with the very core concept of philosophy (ontology) and ends with data analysis sections. A graphical presentation of the said model is presented in figure 2. In this model, we show seven distinctive steps in the left side along with their different dimensions and seven basic questions in the right side making a link between steps and questions.

Notably, all these seven questions (7Qs) are not necessarily required to complete a research in all the cases. It depends on context and nature of problem being investigated. In true sense, one can carry out a pure analytical study to create ‘new knowledge’ with minimum or without extensive data reliance. Studies support that many social science theories were developed without empirical components to critically explore human actions and their relevant implications and consequences. For example, Bhattacherjee (2019) pointed out that it is possible to predict and explain social behaviors without relying on theories that require empirically
testable scientific methods. The case varies largely due to the researchers’ different philosophical orientations. For instance, positivism largely focuses on knowledge creation gained through actual empirical evidences (Kuper & Kuper, 1985). In contrast, interpretivists treat the research world in broader sense. They are mostly found to concentrate on using social critique or symbolic interpretation rather than constructing empirical theories. Nonetheless, these 7Qs are critical for better understandings in regard to how to conduct a social science research in more systematic manner.

![Proposed 7Q Model of Research Methodology](image)

Figure 2: Proposed 7Q Model of Research Methodology
Q1: What is reality made of?

The first question that a researcher should answer is ‘what is reality?’ This is regarded as ontology in philosophy. Basically, ontology studies the nature and categories of ‘being’ (Guba & Lincoln, 1994). In essence, it is important to understand how a researcher perceives the social world. Alternatively, ontology entails the perceptions of the researcher in regards to what the world is. In doctoral studies, a researcher must decide his or her view of the reality. The decision in this case raises two sides of a spectrum - objectivism vs subjectivism. See the first question and first step of the model (Figure 2).

Q2: What is acceptable knowledge?

The second question that a researcher should answer is ‘what is acceptable knowledge?’ This question is termed as epistemology in philosophy. While ontology is concerned with reality, epistemology is about knowledge. Epistemology is therefore dealt with the meaning, sources and limits of knowledge (Klein, 2005). In essence, epistemology concerns ‘what constitutes acceptable knowledge in a field of study’ (Saunders et al., 2012).

Epistemology is more about the relationship between researcher and the research. Sharp (2009) defined epistemology as ‘what counts as knowledge and how is it obtained’. There are three distinct epistemological stances that a researcher takes: positivism, interpretivism and pragmatism. It is worthwhile to note that the answer of the first question (Q1) affects philosophical stance in step 2. See Figure 2.

One of the central issues in social science research is that whether the same principles, procedures and ethos used in natural sciences can also be applied in social science (Bryman & Bell, 2007). If a researcher adopts the philosophical stance of the natural scientist, his or her epistemological approach is likely to be positivist. Thus, a positivist researcher takes an objectives view when conducting research. See the linkage between step 1 and step 2 in the proposed model (figure 2). A researcher holding objectivist view of the world tends to be positivist. A positivist researcher is independent of his or her research i.e., maintaining minimal interactions with research participants (Remenyi et al., 1988).

In positivism, a highly structured methodology is followed (Gill & Johnson, 2002). Interpretivism, on the other hand, advocates that ‘it is necessary for a researcher to understand differences between humans as social actors’ (Saunders et al., 2012). An interpretive researcher is, therefore, likely to understand the differences between research participants through an in-depth investigation. Hence, if a researcher assumes an interpretivist perspective, he or she must adopt a qualitative research strategy (Wilson, 2014). Accordingly, an interpretive researcher holds the subjective view of the world.
The philosophical debates concerning the differences between positivism and interpretivism have had a competitive ring to them (Saunders et al., 2012; Wilson, 2013). This debate forces a researcher to take epistemological stance as either positivist or interpretivist. However, some researchers are reluctant to take any of these two philosophical stances. This has led to the development of the concept of ‘pragmatism’. A pragmatist researcher emphasizes on research questions (Creswell, 2003). Pragmatism argues that it is perfectly possible to work with both interpretivism and positivism philosophies. Thus, a pragmatist researcher holds multiple views of the world. Tashakkori and Teddlie (1998) argued that pragmatism is intuitively appealing as it helps a researcher to avoid the pointless debates regarding the concepts of truth and reality.

Q3: What do you value in your research?

Axiology is the third branch of research philosophy that raises the question of ‘what do you value in your research?’ Axiology is the study of nature of value and value judgments. A researcher’s axiological commitments play a critical role in all stages of the research process. Heron and Reason (1997) argued that a research paradigm must consider ‘axiology’ in addition to ontology and epistemology. Axiology largely defines if a researcher is trying to explain or predict the world, or he or she is only seeking to understand it. There are significant implications of axiology in social science research. In positivism, research is conducted within a value free setting since researchers are independent of their research. Interpretivism, on the other hand, considers the research as value ‘embedded’ as researchers are interdependent with their research projects. See the third step of the 7Q model (Figure 2). A pragmatist may be completely value free like a positivist or value-embedded like an interpretivist (Wilson, 2013) or he or she can take mid-position of value-free and value-laden.

As reflected in the proposed model, there is an inter-relationship between ontology, epistemology, and axiology. Moreover, research paradigms like positivism, interpretivism, and pragmatism differ in terms of ontological, epistemological, and axiological stances.

Q4: How does theory fit into your research?

Once a researcher has selected his or her ontological, epistemological, and axiological stance, the next issue that a researcher encounters is the choice of a research approach. At this point, a researcher must get the answer of the question, how does theory fit into his or her research? All research projects have particular stand points in regard to the use of theory (Saunders et al., 2012). There are two basic approaches to deal with the question of the usage of theory in research: testing theory (deduction) and building theory (induction). Social science researchers are
associated with these deductive and inductive approaches. Researchers, under inductive approach, start the research process with observations of specific instances and conclude the research with the development of explanations (Hyde, 2000). Thus, an inductive approach focuses on ‘building theory’.

Deductive approach, in contrast, begins with verifying a well-known theory. Thus, theory remains at the center point of difference between inductive and deductive research approaches. The deductive approach is concerned with exploring an existing theory and then designing a research strategy to test the validity of that theory in certain context. Conversely, an inductive approach is expected to collect data first and then develops a theory based on data analysis. Creswell (2003) presented the distinctions between inductive and deductive approach in more comprehensive form. See Figure 3A & 3B.

As mentioned in the 7Q model (Figure 2), a positivist researcher works with deductive approach, whilst an interpretivist researcher works with inductive approach. In order to avoid the weaknesses associated with deductive and inductive research approaches, researchers have started to adopt an abductive approach. This abductive approach starts with ‘surprising facts’ or ‘puzzles’ and ends with the establishment of best explanation. This kind of approach is generally adopted by a pragmatist researcher (Morgan, 2007). Selecting the research approach is critically important for doctoral research as it guides the research strategy (Easterby-Smith et al., 2008). Inductive and deductive approaches are not mutually exclusive (Gray, 2009).

![Diagram of the 7Q model for exploring philosophical underpinnings in research methodology](image-url)

(Source: Adapted from Creswell, 2003)
It is possible to combine both inductive and deductive approaches in the same piece of research (Saunders et al., 2012) and even it is often advantageous in some cases. Gray (2009) provided an excellent example along with a graphical presentation showing how deductive and inductive approached can be combined. See figure 4.

We intend to explain how inductive and deductive approached can be combined with an example (not the one that David E. Gray provided in his text). For instance, a researcher is quite interested to explore the problem of sexual harassment in an organization. The researcher first collects some necessary facts in regard to sexual harassment (such as frequencies, types, causes of harassment) from various departments across different organizational positions. Based on the investigation, the researcher is able to develop a theory (inductive approach) that sexual harassment is the outcome of unequal power distribution in the organizational structure.

The researcher further becomes interested in what other problems this unequal power distribution creates in the organization (deductive approach). The researcher sets a hypothesis that sexual harassment occurs due to unequal power distributions and thus it reduces the employees’ productivity. The researcher tests the hypothesis on a selective group of employees (control group) given that the power is redistributed and unequal power distributions comes to a minimal level. The researcher is now testing the productivity of both the groups (regular as well as control group). This way both the inductive and deductive approach can be combined in a research project.
Q5: How will you conduct your research?

One of the central questions of a research project is ‘how will the researcher conduct the research?’ The answer of this question formulates research strategy. Research strategy refers to a course of actions that enables a researcher to address the research questions. This will ultimately shape the flow and structure of the study. In other words, a research strategy is a comprehensive plan to carry out a research project with an aim of answering the research questions (Saunders et al., 2009). There are two common research strategies in social science: qualitative and quantitative.

Qualitative research strategy focuses on gaining a deeper understanding of critical insights into the research problem (Denzin & Lincoln, 2000). A qualitative researcher emphasizes the value-laden nature of inquiry (Wilson, 2013). Thus, a qualitative research owes to subjectivism. Accordingly, a qualitative researcher is an interpretivist. This study concentrates on the processes and meanings within wider context.

Conversely, a quantitative research strategy emphasizes the examination of numerically measured variables using statistical tools and techniques (Bryman, 2004). Thus, a quantitative research work is carried out within a value-free framework. Hence, a quantitative research owes to objectivism. A quantitative researcher is a positivist from philosophical perspective. A list of key differences between qualitative and quantitative research strategy is presented in Table I.

<table>
<thead>
<tr>
<th>Points of Differences</th>
<th>Ontology</th>
<th>Epistemology</th>
<th>Axiology</th>
<th>Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Qualitative</td>
<td>Subjectivism</td>
<td>Interpretivism</td>
<td>Value-laden</td>
<td>Inductive</td>
</tr>
<tr>
<td>Quantitative</td>
<td>Objectivism</td>
<td>Positivism</td>
<td>Value-free</td>
<td>Deductive</td>
</tr>
</tbody>
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Source: Compiled by the Authors. Partially adopted from Bryman (2004)

A social science researcher has the opportunities to adopt both qualitative and quantitative research strategies within the same study. Tashakkori and Teddlie (1998) termed this action as mixed method studies. Proponents of mixed-method studies argue that a mixed-method strategy helps a researcher to triangulate results through internal cross-checking (Gill & Johnson, 1997; Patton, 1990; Brannick & Roche, 1997). However, Bryman (2001) argued that the term ‘mixed methods’ should be replaced with ‘multi-strategy’.

This is because, in practical, qualitative and quantitative are not combined, but the researcher has multiple levels (Wilson, 2013). Thus, the term ‘multi strategy’ is more suitable than ‘mixed methods’. We also use the term ‘multi strategy’ in this paper. See the 5th step of the 7Q model (figure 2). This multi strategy has been gaining popularity among the researchers and the outcome of this popularity is the introduction of an academic journal - The Journal of Mixed Methods Research.
A multi strategy study adopts a pragmatic approach to research. A pragmatic approach under ‘multi strategy’ helps a researcher to answer questions that only a qualitative or quantitative research cannot provide. Thus, it provides a holistic approach to answering research questions with an emphasis on ‘what works best’ (Johnson & Onwuegbuzie, 2004; Sale et al., 2002).

McManus et al. (2017) presented a graphical presentation reflecting how quantitative, qualitative and mixed methods (multi strategy) are used in research. See figure 5. According to McManus et al. (2017), a research strategy can be ‘pure quantitative’, ‘pure qualitative’, qualitative with quantitative methods (Qualitative mixed), quantitative with qualitative methods (Quantitative mixed), and ‘pure mixed’ depending on the requirements of research.

As seen in figure 5, a researcher’s philosophical background or the requirements of a research project largely define the choice of a specific research method. In the context of research philosophies and available methodologies, a researcher may opt for one of three different strategies: purely qualitative, purely quantitative, and mixed methods. However, in case of mixed method strategy, question arises in regard to which method will be the base of research (i.e. qualitative or quantitative). The answer generally lies in the researcher’s perceived preference for any specific research strategy. Whatever the case is, in mixed-method strategy, a researcher’s stance is described as quantitative dominant, qualitative dominant or equal status. See figure 5. In fact, in case of mixed-method strategy, researchers generally start their research process with

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Figure 5: Major Research Methods

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either quantitative or qualitative inquiry at the initial stage of research, and then
they explore the real world scenario through qualitative research method or
validate the previous theories through quantitative investigation. As seen in figure
5, a qualitative dominant researcher generally works with qualitative mixed
strategy i.e., the prime concerns remain at the interpretive research paradigm. In
contrast, a quantitative dominant researcher works with quantitative mixed
strategy i.e., his or her focus is largely centered on the positivism research
paradigm.

Q6: How will you collect data?
Once a researcher has selected research strategy, the next question that he or she
faces is ‘how will he/she collect data? At this stage, the researcher has to select data
collection methods in pursuit of the research questions. The data collection methods
are largely dependent on research strategy.
A researcher with qualitative research strategy will focus on those methods that help
him or her to understand the critical insights of the research problems. The most
common data collection methods in qualitative research include observations, focus
group discussion, and interviews (Silverman, 2000). However, qualitative research
focuses on ‘in-depth interview’ in order to explore the views, reasons and
motivations of participants (Gill et al., 2008). Notably, the most rigorous qualitative
data collection method is case studies. Today, case studies account for a large
proportion of social science research and they are found to be especially valuable in
practice-oriented fields like sociology, management, business administration,
accounting, and so on (Starman, 2013).
Quantitative data collection methods are expected to produce results that are easy to
summarize, compare, and generalize. The common quantitative data collection
methods include questionnaire survey, face-to-face interview, telephone interview,
experiments, secondary statistical data, and so on. Whatever the quantitative data
collection method is, it is expected to result in numerical values.

Q7: How will you analyze your data?
After collecting adequate data, the question that a researcher raises is ‘how he or she
will analyze the collected data?’ Accordingly, the researcher focuses on data analysis
tools and techniques at this stage. Data analysis tools and techniques also vary
according to quantitative and qualitative research. There are various types of
qualitative data analysis such as content analysis, narrative analysis, grounded
analysis, discourse analysis, framework analysis and so on. The data analysis
techniques in qualitative research must be able to uncover trends in thoughts,
behaviors and opinions. In addition to techniques, various statistical tools have been
emerged since 1990s to aid the researchers in analyzing qualitative data such as NVivo, ATLAS.ti, MAXQDA, Transana, and so on. However, the usage of software to analyze qualitative data has been criticized by the academics and researchers. Although qualitative data analysis is intended to explore research problem in general (McCracken, 1988), many social scientists (e.g., Hammersley & Atkinson, 1995) thinks software cannot understand the nuances of meaning of a text. Thus, qualitative data is better analysed manually.

Unlike qualitative data analysis, a researcher can analyze the quantitative data in easier form. The common methods of quantitative data analysis are descriptive and inferential statistics. Since a quantitative researcher works with statistics, he or she uses various statistical analytic softwares like SPSS, STATA, SAS, S-Plus and so on. A researcher must be cautious in selecting the appropriate statistical package for quantitative data analysis.

One of the central issues in data analysis section of a Ph.D. dissertation is that a researcher must provide logical and justified grounds of evidence in support of his or her hypothesis. In many cases, especially in doctoral studies, researchers face numerous difficulties in creating a valid theoretical framework to prove hypothesis. The issue has become critical in research world largely because empirically weekly supportive hypothesis increases the risk of a positive finding in a test which is actually a positive false (Lytsy, 2017). One of the key strategies in this regard is the development of thorough understandings of pertinent theories and analytical models that are relevant to the research problem under investigation. A rigorous literature review and a sound theoretical framework are supposed to help a researcher to build up strong logical grounds in creating a more valid evidence to prove hypothesis. In fact, a researcher should answer: what is the research problem/question? And why is the chosen approach a feasible solution? The answers of these two pertinent questions help a researcher to develop a strong theoretical framework which in turn helps the researcher to create solid evidence to prove hypothesis.

5. IMPLICATIONS FOR DOCTORAL RESEARCH

This paper is an attempt to alleviate a researcher’s, more specifically doctoral researchers, dilemma in understanding and using philosophical assumptions in social science research. Considering this issue (i.e., importance of philosophy in doctoral/social science research), the 7Q model is systematically presented showing the inter-linkages between steps. A critical discussion is carried out in the light of the proposed 7Q model along with 7 basic questions. The proposed model and discussions of the concepts in this paper provide several implications for a social science researcher. These implications are supposed to be quite useful for doctoral research.
The first and the foremost implication is that a doctoral researcher must understand how research philosophy is related to research methodologies. The proposed model indicates the relationship succinctly. For example, researchers with positivism epistemological stance will adopt a quantitative research strategy. Accordingly, they will follow deductive approach in their research. Researchers, on the other hand, with interpretivism epistemological stance will choose an inductive research approach that will drive them to adopt qualitative research strategy. The steps in the 7Q model follow a consistent flow that a researcher practically approaches in conducting the study. For instance, a researcher must decide his or her view of the reality (ontology) at the very beginning of the research project. Then, he or she select his or her research paradigm (epistemology) that ultimately drives his or her values (axiology) in research. These philosophical bases will largely determine a researcher’s research approach (inductive vs deductive) and strategy (qualitative vs quantitative).

Another implication of the model is that a researcher’s epistemology needs not to be rigid. It is very important to consider the research problem and questions. The nature of the study and the associated research questions will largely influence the preference of philosophical stance. Thus, a sound understanding of both the research questions and philosophy is critical in determining the appropriate philosophical stance, especially in removing the dilemma that most of the doctoral researchers face.

Undoubtedly, a research strategy is critical to outlining the course of actions to conduct the study. However, Ph.D. researchers should not confine them to either qualitative or quantitative research strategy for their studies. As discussed in this paper, a multi strategy is very much practical and it does not restrict the researchers to be confined to common research paradigms (Wilson, 2014). A notable implication of the proposed 7Q model of research methodology is that there is a clear distinction between methodology and method. Methodology is both the ‘collection of methods or rules by which a particular piece of study is undertaken’ and the ‘principles, theories and values that underpin a particular approach to research’ (Somekh & Lewin, 2005). Thus, all the steps in the model ranging from ontology to data analysis make up research methodology including ‘method’. We refer the 6th step as ‘method’ in the proposed model. See figure 2. Notably, the terms research strategies and research methods are used interchangeably by the researchers. Some researchers consider ‘qualitative’ and ‘quantitative’ as the strategy and others consider them as methods.

Another implication of the model is that the doctoral researchers must recognize the importance of incorporating philosophical statement in dissertation. It is very difficult to justify the validity and reliability of a research project without knowing a researcher’s philosophical stance. This is more important in case of qualitative research. Whatever a Ph.D. researcher’s philosophical stance is, he or she must provide solid grounds in favor of the adopted research philosophy in the dissertation.
Last but not the least, a doctoral researcher should have a sound understanding of the historical development of philosophy of science and its impact on social science research. Reading a book on basic philosophy is a wise decision! For instance, *Philosophy: A Beginner’s Guide* by Teichmann & Evans (1999) is such a book for studying philosophy at basic level.

Although the proposed 7Q model is mainly developed in context of doctoral studies, the framework is expected to help any kind of researcher at different stages of education and research including MS and M.Phil programs. Indeed, choosing an appropriate research philosophy is important for any kind of research (Chetty, 2016). The framework is largely suitable for doctoral students in the sense that they must have thorough understandings of research philosophy. In fact, in doctoral studies, researchers are required to provide an extensive analysis of philosophical underpinnings in their studies. These, in turn, help the examiners in particular and readers in large to justify and validate research findings i.e. whether the research questions were adequately identified and methodologies were properly selected in light of a given research philosophy (Evans, 2013).

6. CONCLUSION

Philosophical understanding has become critically important in social science research since it largely defines whether research outcomes are appropriately and meaningfully interpreted. Accordingly, Ph.D. researchers have started to refer philosophical assumptions in dissertations and theses. However, the use of multiple terms and consistent development of various philosophical concepts have become impediments to the doctoral researchers in selecting appropriate research philosophy in their studies. In order to remove such dilemma in using philosophical perspectives in doctoral studies, this paper proposes a seven step (7Q) model to provide a concrete and consistent analysis of the philosophical concepts used in social science research in a more systematic manner. For the ease of discussion, especially for better understanding for a novice or doctoral researcher, seven basic questions are set concerning research philosophy and methodology. The critical aspects of philosophical underpinnings in social science research are consistently discussed under the umbrella of seven questions (7Q). Social science researchers, especially doctoral students, are supposed to be greatly benefitted from the proposed 7Q model. However, doctoral researchers should go through the relevant books of research philosophy in addition to studying this model. Universities should introduce philosophical courses at the graduate level. Supervisors of the doctoral research should make the course ‘philosophy of science’ or research philosophy as a must completing course for Ph.D. students.
REFERENCES


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