

## THE USE OF MIXED METHODOLOGY TO ENTREPRENEURSHIP RESEARCH: SOME PRACTICAL ARGUMENTS

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### ABSTRACT

*The Mixed Methodology (MM) has been utilizing as a third and latest approach in the social science research but seems limited use in the field of entrepreneurship research. The article explores some practical logic and argues that the time has already come to use MM in the field of entrepreneurship research. It claims that the creation of knowledge from pragmatist's approach is appropriate and essential to the field of entrepreneurship. It creates the end of paradigm wars of purists between positivism and interpretivism/constructivism. It combines the strengths of both Quantitative (QUAN) and Qualitative (QUAL) approaches and minimizes the limitations. The researchers have the opportunity of choosing and using the design typologies as per the nature of their research agendas and comfort feelings. MM has the clear ways of data integration and analysis introduced by the scholars. Therefore, the article motivates the researchers for using MM to entrepreneurship research to obtain the practical findings with another level of rigor during analysis.*

**KEYWORDS:** Entrepreneurship research, mixed methodology, pragmatism, quantitative, qualitative

### INTRODUCTION

The definition of entrepreneurship includes the creation and management of new businesses, small businesses and family businesses, and the characteristics and special problems of entrepreneurs (Leitch, Hill & Harrison, 2010). The Global Entrepreneurship Monitor (GEM) described entrepreneurship as a 'worldwide phenomenon' that is on the increase (Reynolds, Bygrave & Autio, 2004). It has been taken as a major source of employment, household economy, and innovation. It is also a mechanism by which many people enter the economic and social mainstream of society, facilitating culture formation, population integration, and social mobility (Bednarzik, 2000). It is perceived as the means of economic growth and innovation process of both economies and firms. Hence, it has become a popular phenomenon and taken as an essential part of the study by different disciplines such as economics, sociology, and psychology. The economists, psychologists, and sociologists have accepted to the entrepreneurship as a dynamic process created by human beings for their better livelihoods. Therefore, it has become a popular field of research with growing research communities from a broad variety of disciplines.

The researchers have been studying the entrepreneurship taking different levels like individual firms, national and international level analysis on variety of issues i.e.

entrepreneurial psychology, corporate behavior, entrepreneurial opportunities, and characteristics of entrepreneurs, economic viability, financial performance, business sociology, entrepreneurship and environment, new venture creation, entrepreneurial cognition, venture capital and growth. They use different data collection protocols like survey research, secondary data analysis, interpretivist case studies and so on which underlie with different philosophical assumptions (Leitch, Hill & Harrison, 2010). Therefore, the entrepreneurship research has been using a variety of methods both from QUAN and QUAL approaches.

Positivism and constructionism are two main paradigms in entrepreneurship scholarship (Tatli et al, 2014). The positivists follow the established positivistic concepts and methodologies and reject the articulation of social assumptions like ontology, epistemology, and ideology. The constructionists, on the other side, contribute through viewpoints of socially mediated knowledge system based on idealism and opposite to positivism. Entrepreneurship as a scholarly field is characterized by the unceasing tension between two paradigms: positivism and social constructionism (Tatli et al, 2014). This is also called 'paradigm wars' of positivism and constructivism or 'objective-subjective divide' which have been claiming the knowledge adversely. This debate created a number of dichotomies on the whole defining patterns and research procedures in entrepreneurship research. As the result, the knowledge system on those activities remains limited and black box of entrepreneurship has not been opened up yet (Lopez, Zozimo, Roman & Jack, 2016).

Recently the management researchers have been calling to use Mixed Methodology (MM) rather than using just either QUAN or QUAL (Pansiri, 2005, p. 193). However, due to the domination of positivism and then the use of interpretivism/constructivism, MM is not widely used in entrepreneurship research. The key idea of this article is that the use of MM to entrepreneurship research helps to terminate the paradigm debates of the purists of either QUAN or QUAL who have been claiming the worldviews differently. The MM is appropriate and capable to overcome from the dichotomies long-established by the hostile divide between positivist and constructionist paradigms. The paper motivates to use the MM highlighting some philosophical and process-benefits through the viewpoint of pragmatism which offers a practical starting point for a pluralist methodology.

## **RESEARCH APPROACHES IN ENTREPRENEURSHIP**

The entrepreneurship and its interpretation are old as the starting of the human civilization but the entrepreneurship theory is still considered quite a young academic field (Neergaard & Ulhoi, 2007). It has become a popular field of inquiry for a quarter of a century with a variety of research communities. Positivism and constructionism are main paradigms in entrepreneurship scholarship contributing much to analyze the issues of entrepreneurial initiation and development. The third approach, which has been entering to this field, is MM because the scholars have defined to entrepreneurship as a multifaceted, complex social construct that is enacted within many different contexts by a variety of actors.

The entrepreneurship research has been historically guided by the positivism (also known as QUAN) in the earlier decades of the 20th century in the influence of economics, sociology, and psychology on their evolution (Leitch, Hill & Harrison, 2010). The management and organizational theories followed the QUAN approach using business/economic/organizational theories and statistical tools of numeric data

collection, analysis and forecasting etc. The entrepreneurship research was believed as a natural science and perceived virtues of rationality, universality, objectivity, and value-free knowledge. Hence, the entrepreneurship research was mediated by the positivist ontology and epistemology. The methodological processes always entailed establishing the credibility in QUAN approach.

On the other side, the adaptation of interpretivist/constructionist approach (also known as QUAL) was very low in entrepreneurship research at the beginning, attributing the lack of methodological rigor and attention to the detail in those studies which have been taken (Neergaard & Ulhøi, 2007). Gradually, the interpretivist/constructionist approach became popular in this field because the scholars have encouragingly argued and recommended to the QUAL as an alternative research approach to the field of entrepreneurship. For example, Mathys-Watkins and Lowe (2005) argued that an interpretivist approach can be employed in entrepreneurship studies to permit paradigms to interpret each other and so provide a more textured approach to understanding entrepreneurship. The interpretivist/constructivist is based on the life-world ontology. This ontology considers in the multiple realities socially constructed and attached to human science.

The third, Mixed Methodology (MM) has come as a research approach in the last 20 years (Creswell & Garrett, 2008). Over time, MM has gradually gained momentum in social and behavioral science as a viable alternative research method (Hanson et al. 2005, p. 225). But, the use of MM to entrepreneurship research is very rare due to the domination of single approaches like positivist and interpretivist. Thus, this paper motivates to the practitioners for using MM to entrepreneurship research highlighting some practical arguments which are beneficial to entrepreneurship creation and development.

### MIXED METHODOLOGY

Mixed Methodology (MM) also known as 'mixed methods research' or 'mixed research' or 'mixed-model designs' may be defined as "the collection or analysis of both quantitative and qualitative data in a single study in which the data are collected concurrently or sequentially, are given a priority, and involve the integration of the data at one or more stages in the process of research" (Creswell, Plano Clark, Gutmann, & Hanson, 2003, p. 212). The MM has been considered as a legitimate and stand-alone approach in social science including entrepreneurship research. It is popular among the researchers who have not stood within the boundaries of only QUAN or QUAL approach. It has been taken as a midway between the extremes of Plato (quantitative approach) and the Sophists (qualitative approach). The MM employs the QUAN and QUAL approaches both in a research project which provides a better understanding of research problems and the analysis of complex phenomena for synthesizing more practical findings (Molina Azorin & Cameron, 2010). It uses both approaches of opposite ontological, epistemological, axiological, rhetorical, and methodological assumptions jointly to explore the practical findings of the research project. It makes possible to reach another level of synthesis by employing the ideas of both approaches.

At method level, the combinations can be used to expand the scope of a study as researchers seek to capture method-linked dimensions of a targeted phenomenon (Greene et al., 1989). Today, the researchers are increasingly trying to be more interdisciplinary, rigorous and dynamic; therefore, they need to harmonize one method

with another, and the researchers need a comprehensive understanding of multiple methods (Johnson & Onwuegbuzie, 2004). MM combines both nomothetic and idiographic approaches in an attempt to serve the dual purposes of generalization and in-depth understanding to gain an overview of social realities from a larger sample while understanding the other through a detailed study of a smaller sample (Bazeley, 2004).

Greene et al., (1989) have recommended three purposes of mixing at the technique level which include triangulation, complementarity, and development. Triangulation helps to achieve or ensure the corroboration of data, or convergent validation. Testing from the different instrument and measuring tapes on looking the corroboration of data and validation findings is more sincere and some hazardous work for all of the researchers. But, it is not possible and necessary to triangulate to all of the social issues in reality. Complementarity promotes to clarify, explain, or otherwise more fully elaborate on the results of analyses. The results from two methodologies may contradict to each other and the researcher may be filled with confusions. Development is the third purpose which indicates the use of additional sampling, data collection, and analysis techniques; the researcher might feel an additional burden due to the limited time and money.

Although the scholars of MM like Teddlie and Tashakkori (2009) have included the transformative approach to the textbook of mixed methods research (p. 87), the pragmatism has been taken as an appropriate paradigm for mixed methodology highlighting the practical relevance. The following section provides the conceptual footings of pragmatism and the utilization to the research.

## **PRAGMATISM**

The mixed methods literature has commonly cited pragmatism as a relevant philosophical approach (Scott & Briggs, 2009). The scholars like A. Tashakkori, C. Teddlie, V. L. Plano Clerk and J. W. Creswell have provided a historical context for mixed methods research, citing pragmatists as the peacemakers in the 'paradigm wars' of the 1970s to 1990s (Tashakkori & Teddlie, 1998; Plano Clerk & Creswell, 2008). The MM literature has commonly accepted to Pragmatism as an alternative worldview to those of positivism/postpositivism and constructivism, not clearly the only one and focuses on the problem to be researched and the consequences of the research (Creswell & Plano Clark, 2007, p. 26). Tashakkori and Teddlie (1998) and, Plano Clark and Creswell (2008) have shared a historical context for mixed methodology, citing pragmatists as the peacemakers in the 'paradigm wars' of the 1970s to 1990s (Scott & Briggs, 2009, 224). The pragmatists have been attempting to enjoy respectfully the wisdom of blending both of those worldviews while also seeking a workable middle solution for the research problems (Johnson, Onwuegbuzie & Turner, 2007). Therefore, it is the best paradigm for mixed methods research (Tashakkori & Teddlie, 2003).

Pragmatism is an American philosophy which was first introduced into philosophy by Charles Sanders Peirce in 1878 in his article 'How to make our ideas clear' (Pansiri, 2005). Pragmatism was initially developed from the Greek word 'pragma', which means action, practice or practical (James, 2000). This perspective was articulated by many scholars such as Dewey, James, and Pierce to contemporaries such as Murphy, Rorty, and West (Hanson et. al., 2005). Maxcy (2003) suggested that two main historical periods of pragmatism were its formative years from 1860 to 1930 and a resurgent neopragmatism from the late 1960s. He associated pragmatism with the American 'frontier mentality', yet traced influences from the ideas of Kant, the British Empiricists, the utilitarians, and

Darwin (Scott & Briggs, 2009). It draws on many ideas including using 'what works' using diverse approaches and valuing both objective and subjective knowledge (Cherryholmes, 1992).

The pragmatic rule or maxim or method states the current meaning or instrumental or provisional truth value (which James, 1995 would term 'cash value') of an expression e.g., 'all reality has a material base' or 'qualitative research is superior for uncovering humanistic research findings' is to be determined by the experiences or practical consequences of belief in or use of the expression in the world (Johnson & Onwuegbuzie, 2004). Pragmatism allows the researcher to be free of mental and practical constraints imposed by the 'forced choice dichotomy between postpositivism and constructivism' (Creswell & Plano Clark, 2007, p. 27), and researchers do not have to 'be the prisoner of a particular [research] method or technique' (Robson, 1993, p. 291; Feilzer, 2010, p. 8). The pragmatism has the logic that the methods and theories of empirical science or any other discipline (e. g. theology) are not capable to describe the truth once or for all (Giacobbi, Poczwardowski & Hager, 2005).

Dewey (1925) has claimed that the research paradigms of objectivism and subjectivism are originated from the same paradigm-family that they seek to find 'the truth', whether it is an objective truth or the relative truth of multiple realities (Dewey, 1925, p. 47; Feilzer, 2010, p. 10). The goals of both approaches are same to produce the knowledge to human society and employ their inquiries so that the knowledge would best correspond to represent to the reality (Rorty, 1999, p. xxii; Feilzer, 2010, p. 10). Thus, the pragmatists reject the 'either-or' and opposite dichotomies to the field of research; they have been promoting to calling for a convergence of both QUAN and QUAL.

### **PRAGMATISM IN ENTREPRENEURSHIP RESEARCH**

The entrepreneurship as a practice-based discipline (Gherardi, 2006; Schatzki, 2001) suggests that its knowledge is bounded by its contextual nature (Leitch, Hill & Harrison, 2010, p. 71). Therefore, entrepreneurship research is obviously pragmatic under the particular social circumstances. Pragmatism has three leading epistemic stands i.e. 'belief', 'doubt' and 'habit' (Pansiri, 2005). The knowledge and social reality both are based on the beliefs and habits which are socially constructed by the process of institutionalization, legitimation, and socialization (Yefimov, 2003). The entrepreneurship is a social action motivated by the economic gains primarily and mediated by the variety of social cultures of different communities. The entrepreneurial activities are shaped, selected and continued on the basis of human choices, knowledge, experiences, and opinions based on the plurality of data collection and interpretation on their ways. The entrepreneurship behavior of an individual or the group of individuals has completely based the beliefs and habits internalized and institutionalized.

Likewise, the entrepreneurship researchers have not agreed to a single ontology based on either positivism or constructivism due to multiple claims and arguments on the 'facts'. The scholars have the logic to implement the pragmatist's ontology and epistemology for accumulating the strengths of both objective and subjective approaches. The core of pragmatist's idea was shaped as the impartial model of inquiry without presupposition on the nature of the social world (Scott & Briggs, 2009). The field of entrepreneurship is contextual and always influenced by the cultural, political and historical conditions. The Pragmatists argue that the science, knowledge construction, and the practical concerns of people require ongoing deliberations about the use and benefits of knowledge at a

particular time or place (Giacobbi, Poczwadowski & Hager, 2005). All of the inquiries are purposeful and situated; but, the mandates of different approaches are dissimilar to each other. The mandate of science to a pragmatist is not to find truth or reality, the existence of which is perpetually in dispute but to facilitate for solving the human problems (Powell, 2001). The entrepreneurship scholars have also the single purpose of analyzing the issues or problems during the creation and continuation of the enterprising activities, and identification of the possible solutions.

Likewise, Pragmatism invites to MM to produce more practical knowledge for human society (Johnson & Onwuegbuzie, 2004). It draws on many ideas including using 'what works', using diverse approaches and valuing both objective and subjective knowledge. The pragmatists advocate for collecting the practical findings of all research works and refer to integrate those QUAN and QUAL within a single study. Indeed, pragmatists ascribe to the philosophy that the research question should drive the method(s) used, believing that 'epistemological purity doesn't get research done' (Onwuegbuzie & Leech, 2005). The pragmatism invites the approach of producing more practical findings with new and unique taste to the social world; hence, it is a fusion-point of paradigm debates and provides a clear highway of combining design and data within the MM.

Therefore, the pragmatist's approach is appropriate to the field of entrepreneurship research to create the debate-free situation for the researchers and synthesize the practical knowledge and realities.

#### **FUSION OF OPPOSITE CAMPS**

The field of entrepreneurship research has also been affected by the opposite debates and planted the never-ending tension between two paradigms: positivism and social constructionism. This tension, in turn, generated a number of dichotomies that shaped the ontologies, epistemologies, and methodologies of entrepreneurship research (Tatli et al, 2014). The purists of positivist or constructivist/ interpretivist have been placing their opposite logic to claim the knowledge. But, the opposite debates of the purists either QUAN or QUAL create only the confusions and the environment of incompatibility. As a remedy, MM has emerged with the promise of bridging across both traditions and creating the situation of a cease-fire between them. The compatibilist or non-purist or mixed position allows researchers to mix and match design components that offer the best chance of answering the specific research questions (Johnson & Onwuegbuzie, 2004, p. 15).

Obviously, the field of entrepreneurship research is a multifaceted, complex social construct that is enacted in many different contexts by a variety of actors (Leitch, Hill & Harrison, 2010, p. 68). Therefore, the researchers need to know about the concepts and application of both QUAN and QUAL methods, collaborate and negotiate between them. MM combines both forms of data and considers to the analysis of problems beyond simple numbers in a quantitative sense or words in a qualitative sense (Creswell & Plano Clark, 2011). The MM researchers embrace each of the incompatible paradigms, and carefully navigate between them when working in the QUAN versus QUAL domains (Fila, Hess & Purzer, 2015). MM covers both testability and context into the research. It covers the wider range of data collection and analysis that ensures the result in the fuller picture than from the study using a single approach. Therefore, the contribution of MM would be a peace-maker in entrepreneurship research and innovator by providing the signals for jumping out from the orthodoxy of either single truth or multiple realities.

### **ACCUMULATION OF THE STRENGTHS OF BOTH APPROACHES**

Entrepreneurship is one of the social actions of human beings and hence, it is completely attached to human psychology, attitudes, thoughts, and beliefs. Qualitative data are in-depth descriptions of circumstances, people, interactions, observed behaviors, events, attitudes, thoughts and beliefs, and direct quotes from people who have experienced or are experiencing the phenomenon (Patton, 2002). The QUAL has the strengths of generating rich and detailed understandings of human experiences depending on the original contexts. The success of entrepreneurship is based on the human emotions and experiences which is shaped by the particular contexts. The context is perceived as a most important issue because the entrepreneurship is always contextual. Moreover, it attains to an in-depth analysis of complex human, family systems, and cultural experiences. The QUAL approaches response to the social conditions, local settings and the needs of the stakeholders.

The scholars have given high importance to MM and said, the integration of QUAN and QUAL data can intensely enhance the value of research findings in entrepreneurship research. The combination of both research methods can enable the researchers to solve the questions at different stages of inquiry so that the current knowledge can be enhanced and enriched by 'filling the gaps' which is not possible by a single approach (Currell & Towler, 2003). Moreover, using multiple methods increases the robustness of results because the findings can be strengthened through triangulation and cross-validation. The robust results can provide the knowledge close to the human practices so that contribute more to the entrepreneurship initiation, continuation, and advancement. They have motivated to mix these methods in a study so that the quality of a research work can be improved when the biases, limitations, and weaknesses of a method following one approach are counterbalanced, or compensated for, by mixing with a method belonging to the other approach (Fidel, 2008). A researcher can use the strengths of an additional method to fulfill the weaknesses in another method by using both in a research study. Moreover, it is an attempt to legitimate the use of multiple approaches in answering research questions, rather than restricting or constraining researchers' choices and rejects dogmatism (Johnson & Onwuegbuzie, 2004).

### **MINIMIZATION OF THE LIMITATIONS OF BOTH APPROACHES**

Both research approaches have their limitations from ontological stands to methodologies and perceiving the black dots to the knowledge system of entrepreneurship. Due to the limitations and opposite criticisms of both methods, there are multiple confusions raised between the worldviews of QUAN and QUAL.

The dominance of the positivist paradigm in entrepreneurship is seen as problematic. For example, Lindgren and Packendorff (2009) argue that the majority of entrepreneurship literature does not articulate assumptions such as ontology, epistemology, and ideology, which leads to the positivistic concepts and methodologies (as cited by Tatli et al, 2014, p. 3). The positivistic approach [or QUAN] researchers engage in testing the phenomena through theory and hypothesis rather than producing new theories. QUAN invite to the detachment of information from its 'real world' context and refers to as decontextualization (Moghaddam, Walker, & Harre, 2003; Viruel-Fuentes, 2007). When we use MM, the lacking of the assumptions like ontology, epistemology, and methodology will be articulated for the mixed approach as a fusion point. The rigidity of limiting to the hypothesis and detachment from the real world context would

be covered by the inductive initiation of QUAL in a single project. QUAN produces too abstract and general knowledge and might get complication during the direct application to specific local situations, contexts, and individuals (Johnson & Onwuegbuzie, 2004). MM do not limit its study to the generalizable knowledge and also looks to the particular contexts through the QUAL approach concurrently or sequentially. Thus, the lacking part of the study of local situations, contexts and individual cases would be fulfilled.

On the other hand, the QUAL has been experiencing the difficulties in the reliable integration of information across observations or cases (Kirk & Miller, 1986); have not well-defined procedures and deals with the very small and unrepresentative samples (Castro, Kellison, Boyd &Kopak, 2010). These are the shortcomings noted by the research practitioners; therefore, QUAL has not been serving completely or at the point of saturation to the entrepreneurship research. The researcher's personal biases and idiosyncrasies can easily influence the results (Johnson & Onwuegbuzie, 2004). The crises of representation, legitimation, and praxis exist in the qualitative paradigm and more of the practitioners are hanging on these hooks during their research endeavors. The MM fulfills to the crises of representation, legitimation and praxis noted to the QUAL by using another QUAN approach as a means of filling the gaps. Ensuring adequate size of the sample, leading from both of the chairs, testing, and multi-testing through the lenses of both approaches would balance to the situations of un-representation, the pressure of personal biases and idiosyncrasies.

#### **AVAILABILITY OF USER-FRIENDLY TYPOLOGIES**

MM is relatively newer to the field of entrepreneurship research. But, it is obviously matured to of social science and psychology. The MM comprises the different approaches at any or all of a number of stages through the research. MM mixes or combines QUAN and QUAL research approaches and includes the techniques, methods or language into a single study. It is obviously labor-intensive than the single paradigm; therefore, the researcher must be known to both traditions. MM refers to an emergent methodology that advances the systematic integration, or 'mixing', of QUAN and QUAL data within a single investigation or sustained program of inquiry. The 'mixing' may be nothing more than a side by side or sequential use of different methods, or it may be that different methods are being fully integrated into a single analysis. But, other scholars have introduced majorly two types of mixing i.e. sequential and parallel. Under these approaches, they have disaggregated into many types and ways of integration so that the researchers enjoy the most freedom to their works.

For making more credible and well-designated to the researchers, Greene and Caracelli (1997) have introduced a typology frame taking two categories or alternative designs i.e. component and integrated. 'Component' designs include three alternative ways of producing more comprehensive results/conclusions like triangulation, complementarity, and expansion. 'Triangulation' corroborates the findings from different methods where 'complementarity' takes one dominant method and elaborates through the findings of another method. The third, 'expansion' follows the different methods and presents the results side by side. The 'component design' does not mix the data collected in the analysis stage but interprets jointly to the findings from different methods.

On the other hand, integrated design disaggregates to four specific ways i.e. iterative, embedded or nested, holistic and transformative. 'Iterative design' explores the dynamic interplay of findings from different methods throughout the evaluation. The second,

'embedded or nested' locates one method into another and plays into "creative tension". Nesting refers to the extent to which multiple data types are collected from the same actors, organizations, or entities (Small, 2011). This design integrates the data for taking one major and another supportive to conclude findings. The creative tension might be there the supportive method may lead to the main method in findings. The third, 'holistic' integrates the methods throughout the study for building one integrated explanation of results. The fourth, 'transformative' mixes methods to capture different value commitments which can lead to "reconfiguring the dialog across ideological differences" (Greene & Caracelli, 1997, p. 24).

Creswell & Plano Clark (2007) have also introduced a constructive typology with multiple alternatives in design. They have given four major design types i.e. triangulation, embedded, explanatory and exploratory. The triangulation design follows the concurrent approach which is "characterized by the collection of both types of data during the same stage" (Castro et al., 2010, p. 344). The embedded design follows either concurrent or sequential approach accepting as a larger design to QUAN or QUAL. In sequential designs, either the qualitative or quantitative data are collected in an initial stage, followed by the collection of the other data type during a second stage.

The triangulation design is defined as the concurrent from the beginning to ending and the embedded design might be either concurrent or sequential and one will be dominant both QUAN and QUAL. Explanatory leads by QUAN and exploratory leads by QUAL (Creswell & Plano Clark, 2007). Through, either sequential or concurrent, MM integrates the methodology and data in a research work. "Even among mixed methods studies, a common limitation has been the use of qualitative and quantitative approaches in a sequential temporal order, thus limiting the integration of both data forms under a unified process of data analysis" (Bryman, 2007). Likewise, Fetters, Curry, and Creswell (2013) have also acknowledged three basic designs of integration which includes (1) exploratory sequential; (2) explanatory sequential; and (3) convergent designs. In sequential designs, the intent is to have one phase of the mixed methods study build on the other, whereas in the convergent designs the intent is to merge the phases in order that the quantitative and qualitative results can be compared.

#### CLARITY IN METHODS

Taking a non-purist or compatibilist or mixed position allows researchers to mix and match design components that offer the best chance of answering their specific research questions (Johnson & Onwuegbuzie, 2004). The researcher collects the data from both QUAN and QUAL approaches in a single study either concurrently or sequentially as the priority is given and integrates the collected data at one or more stages in the process (Creswell, Plano Clark, Gutmann, & Hanson, 2003, p. 212). The data collection and analysis techniques are not linked to paradigms. Both QUAN and QUAL researchers may use interviews and even the very same standardized measures to answer their questions, but they will employ these techniques and, more importantly, analytically treat their results differently (Sandelowski, 2000).

With the debate on the value of QUAN versus QUAL moderating to a recognition that both have a place, the 'real issues,' according to Patton (1989), have become 'methodological flexibility and appropriateness' (Bazeley, 2002, p. 144). The technique-level-integration involves the sampling, data collection, and data analysis techniques commonly (although not necessarily) conceived as QUAN or QUAL; because the

techniques are tied neither to paradigms nor to methods and combinations at the technique level permit innovative uses of a range of techniques for a variety of purposes (Sandelowski, 2000). The MM scholars have advocated its possibility and practicing to the integration at technique level but differently. The major conception of integration is at technique level majorly during sampling, data collection, and analysis stages. In the technique level, combining sampling strategies is one of the major parts for adequate integration of data in a research study. Sandelowski (2000) has recommended to purposeful and probability sampling for integrating usefully. To increase representation, Onwuegbuzie and Leech (2007) have introduced the power analyses in MM. Such power analyses provide researchers with information regarding appropriate sample sizes for both QUAN and QUAL phases of a mixed methods investigation. For example, Bazeley (2002) has stated that where the total N is less than 20, it is inappropriate to report percentages, and few inferential statistical procedures can be applied to such small samples. The chi-square statistic neither is validly used to test a relationship between variables where there are small expected frequencies nor where categories are not mutually exclusive, and samples in the range of 10 to 20 cases per variable are required for multivariate analyses. The opportunity for detailed study while maintaining balance and variety may be more important than satisfying selection criteria based on a sampling of attributes.

Likewise, data collection and analysis are also the important stages of integration in MM. The design typologies have given numbers of alternatives for collecting and integrating the data in the major forms of concurrent and sequential. The data collection techniques can be selected which the researcher takes as appropriate from the techniques used by QUAN and QUAL approaches. The process provides a better runway for analyzing the data during a research project through MM.

## CONCLUSION

Entrepreneurship is the field of human practice; thus, it expects obviously the pragmatic knowledge system so that the issues would be seen through the lenses of a mixed approach. It is always contextual and mediated by the cultural, political and historical conditions and requires the use and benefits of the knowledge explored by the research activities. The pragmatist's ontology, epistemology, and methodology can serve to produce the knowledge which facilitates to solve the entrepreneurial problems. The next, MM has been taken as a fusion point of the paradigm wars remaining as an unsolved tension to the field of social science and the entrepreneurship research has also been affecting. The opposite debates and dichotomies have been dividing to the worldviews to the positivist and constructivist thoughts. Obviously, the debates have been disturbing to understand the social realities and the process of knowledge manufacturing. MM plays the role of peacemaker between the purists of QUAN and QUAL and calls for the transformation to pragmatic knowledge articulators which is most essential to entrepreneurship research because the scholars have been calling to methodological plurality in this field. The paper placed another argument that MM as only a genuine approach for accumulating the strengths of QUAN and QUAL. The entrepreneurship research would be more complete by blending both approaches, which ensures higher credibility by including the widely generalizable findings and human experiences under original contexts in a single study. This is a process of creative tensions and not impossible to travel to the multilayer analysis that devoted to 'what works' and also plays the role to 'fill the gaps' which is not possible by a single approach. The entrepreneurship research

would be benefitted by avoiding or minimizing the limitations of the single approach either QUAN or QUAL.

Likewise, there are numbers of design alternatives based on majorly two aspects of mixing i.e. concurrent or sequential; accepted and have the permission of using a range of techniques innovatively during technique level integration. The researchers in the field of entrepreneurship should not be confused and stressed due to the rigidity of the methodology and design. Complementarity and triangulation are possible in MM which can produce the comprehensive results. Hence, MM contributes to making a research more fruitful and produces the more purified findings. Both concurrent and sequential data collecting and analysis provide the highway of an integrated approach. There is no unclear situation during the methods and techniques so that the researchers would not be dishonest or out of the track but should secure upper level of understanding. The process of connecting the data, building best data collection and mixture, merging both data and, embedding the data collecting and analysis are the major recommended procedures of data integration which ensures the quality of using MM. Therefore, the use of MM contributes to another level of knowledge creation and utilization for the advancement of the entrepreneurship research.

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