International Journal of Social Science and Economic Research

ISSN: 2455-8834

Volume:06, Issue:12 "December 2021"

THE IMPACT OF DIVERSITY ON INNOVATION : LITERATURE REVIEW

Hasan Mubarak Madhi and Dr. Norlaile binti Salleh Hudin

Faculty of Management and Economics, UPSI, Malaysia

DOI: 10.46609/IJSSER.2021.v06i12.010 URL: https://doi.org/10.46609/IJSSER.2021.v06i12.010

Received: 4 Dec. 2021 / Accepted: 24 Dec. 2021 / Published: 30 Dec. 2021

ABSTRACT

Innovation, cultural diversity in workplace has attracted a serious research attention over the last few years. In our paper, we have attempted to make a literature review of innovation and cultural diversity concepts and theories. First, we have looked through definitions and characteristics of diversity itself and then we have covered definitions for culture and innovation. Then, we focused on the relationship between innovation and cultural diversity. We defined that existence of foreigners in firms can influence on innovation performance, as well as that diasporas can play significant role in enhancing the innovativeness. In addition, we found from the review the high importance of city and migrant diversity for firms aiming to increase its innovativeness. Results of the literature review reveals a considerable spurt and existence of a lot of knowledge gaps in this field. The aim of this study was to provide an up-to-date and detailed review of the literature on relationship between innovation and cultural diversity.

1. Introduction

In today's political, economic, and global business environment, diversity has become increasingly important (Bourke et al, 2017), as it has several advantages for the performance of the company (Larson 2017, Forbes 2016, Deloitte 2016). These advantages as stated by Andrade (2010) are summarized as follow:

- Increased Productivity
- Increased creativity and Problem solving
- Attract and Retain talent
- Help to build synergy in teams and enhances communication skills
- satisfied diverse customer

ISSN: 2455-8834

Volume:06, Issue:12 "December 2021"

Having employees who differ in thought processes, background, culture and beliefs is paramount to developing innovative ideas and to pushing the status quo. Retaining senior-level diverse employees is an ongoing challenge, and by promoting diverse talent and giving them access to a support network, diversity will become a priority within the organization, from the top-down (Grillo, 2014) (Hofstra et.al 2020).Employee diversity has many perspectives in literature, some researches see that it has good impact, while others found that it has negative influence. Milliken and Martins (1996), found that diversity can be a double-edged sword, increasing the fact that group members will be dissatisfied and then fail to identify the opportunity for creativity. Other research shows that various types of team and organizational diversity sometimes increase conflict, reduce social cohesion, and increase employee turnover (Jackson, Joshi, & Erhardt, 2003; Webber & Donahue, 2001).In 2015, McKinsey & Company published research that looked at the relationship between the level of diversity and company financial performance. According to the research, companies in the top quartile of racial/ethnic diversity were 35 per cent more likely to have financial returns above their national industry median. Forbes Insights conducted a comprehensive survey in 2011 of more than 300 senior executives and found that Senior executives are recognizing that a diverse set of experiences, perspectives, and backgrounds is crucial to innovation and the development of new ideas and agreed that diversity is crucial to encouraging different perspectives and ideas that foster innovation.But new research provides compelling evidence that diversity unlocks innovation and drives market growth—a finding that should intensify efforts to ensure that executive ranks both embody and embrace the power of differences (Larson, 2017, Sherbin et al. 2013) (Fadeeva and Mochizuki, 2010) (Østergaard et al,2011) (Hewlett et al.2013).Diversity unlocks innovation by creating an environment where "outside the box" ideas are heard. When minorities form a critical mass and leaders value differences, all employees can find senior people to go for compelling ideas and can persuade those in charge of budgets to deploy resources to develop those ideas. Research conducted by the Work Foundation (Jones,2006) (Rolston, 2015)show that diversity in work groups yields greater productivity, competitive advantages and is a key component for effective people management (SHRM; 1998). Moreover, diverse executive teams and corporate boards produce higher returns on equity, improved risk mitigation, higher return on sales, invested capital and corporate revenue results (McKinsey 2015) (Vence and Trigo, 2009).Also, a review of the literature reveals that there are many enablers that are known to influence innovation. These enablers can be broadly classified into either a social (culture, people) or technical perspective, with the latter covering information technology infrastructure. Although, diversity is a proven catalyst of innovation, but unfortunately many initiatives of Diversity-Innovation fail because organizations behave defensively, putting corporate policies in place to increase diversity (appointing a Chief Diversity Officer, setting up diverse candidate slates, implementing

ISSN: 2455-8834

Volume:06, Issue:12 "December 2021"

flexible working policies) and thus avoid expensive lawsuits, without helping individual employees develop a mindset of inclusion (Bailey, 2014).Thus, we can assume that there exists an optimal level regarding to relationship between cultural diversity and innovation.

2. Methodology

2.1 Identification

The review process in selecting a number of relevant articles. where keywords has identified , and followed by the process of searching for related and similar terms based on the thesaurus, dictionaries, encyclopedia, and past researches. lastly, we use the keyword for searching the articles in Scopus and Web of Science database.

2.2 Screening

The purpose of the first stage of screening was to remove duplicate articles. In this case, many articles were excluded during the first stage, while 33 articles were screened based on several inclusion and exclusion criteria determined by the researchers in the second stage. The first criterion was the literature type in which the researchers decided to focus only on the journal (research articles) because it acts as the primary sources that offer empirical data. Hence, this further implies that publication in the form of systematic review, review, meta-analysis, meta-synthesis, book series, book, chapter in a book, and conference proceeding were excluded in the current research. In addition, it should be noted that the review only focused on articles that were published in English. Most importantly, articles published in the field of social science were selected in order to increase the possibility of retrieving related articles.

3. Literature Review

The interplay between diversity and innovation is a complex and at times challenging one. Few researches only were focused in this interplay. In order to well understand this interplay, a proper study the literature review of the concepts such as innovation, MPD and diversity must be disposed.

3.1 Innovation: Definitions, Drivers/Enablers and Models.

To well present the subject of innovation, focusing on terminologies or historical perspective would be interesting for our literature review, but not enough to develop a complete insight. Thus, exploring the literature regarding innovation, the researcher categorizes it in three sides: terminologies, drivers and models.

ISSN: 2455-8834

Volume:06, Issue:12 "December 2021"

3.1.1. Innovation: Definitions and terminologies

Through the management books and journals, several models and assumptions about innovation were developed based on many contexts and criteria.

Based on Schumpeter' work, innovation is categorized into radical or technological and incremental innovation. However, his classification is based into different context and environment (1947) related to entrepreneurship and organization rather than social innovation.

Innovation had known a great debate between theoreticians and academics. Although, many articles and books were about the new product development and innovation process, but we found interesting researches in the innovation and innovation management, and thus many definitions.

The definition of innovation has been an area of interest both for researchers and for different industries.

The following table summarizes the main studies conducted on innovation, taking in consideration the research scopes, the type of innovation, the organization size (big or small companies) and their type (private or public).

ISSN: 2455-8834

Volume:06, Issue:12 "December 2021"

Table1.Conceptual development of Innovation

Authors	Sources	Research Focus	Innovation Type	Organization Size	Organization Type
Rogers 1962	Diffusion of Innovation. Published in **Free Press of Glencoe.**	Research from over 508 diffusion studies	**NA**	**NA**	**NA**
Cooper & Kleinschmidt 1986	"An Investigation into the New Product Process: Steps, Deficiencies, and Impact" published in ***Journal of Product Innovation Management***	Study of 252 New Product	Industrial, manufacturing, Product and Innovation (Radical)	Big companies with own R&D department	Private companies
Rothwell 1994	"Towards the Fifth-generation Innovation Process"published in ***International Marketing Review***	Comparison of previous researches	Product focus, mainly in radical innovation	Big companies	Private companies

ISSN: 2455-8834

Volume:06, Issue:12 "December 2021"

Andrew Van de Ven, Douglas Polley, Raghu Garud, Sankaran Venkataraman 1999	"The Innovation Journey" ***Book; Oxford University Press***	Empirical research studies	Product, process and services. Innovation mostly tends to radical.	Big companies	Private companies
Nooteboom 2001	"Learning and Innovation in Organizations and Economies" ***Book; Oxford University Press***	Focus in Theoretical perspective	Incremental and radical	Big and small companies	Private and public companies
Geoff Mulgan and David Albury 2003	"Innovation in the Public Sector" London: Prime Minister's Strategy Unit/Cabinet Office.	Case studies	Incremental and radical	Big companies	Public sector
Verloop 2004	"Insight in Innovation: Managing innovation by understanding the Laws of Innovation". Elsevier Science.	Insights and experience	Radical	Big companies	Private companies

ISSN: 2455-8834

Volume:06, Issue:12 "December 2021"

Cormican and O'Sullivan2004	"Auditing best practice for effective for product innovation management" ***International Journal of Technical Innovation and Entrepreneurship***	Focus in Theoretical perspective	Product and technology Continuous innovation	Big International companies	Private companies
Tidd, Bessant, and Pavitt 2005	"Managing innovation. Integrating technological, market and organizational change" ***UK: John Wiley & Sons.***	Empirical research studies	Product, process and services. Innovation mostly tends to radical.	Big companies	Private companies
Andrews, Sirkin, Haanaes and Micheal 2007	"Senior Management Survey on Innovation" Boston Consultancy Group available at ***Harvard Business School Press***	Cases and Empirical research studies	Product, process and services. Innovation mostly tends to radical.	Big companies	Private companies

ISSN: 2455-8834

Volume:06, Issue:12 "December 2021"

Morten T. *Hansen* and Julian *Birkinshaw* *2007*	"The Innovation Value Chain " available at ***Harvard Business School Press***	Based on the experiences of the authors	Not explicit, but it is clear to tend to radical	Big companies	Private companies
Jacobs and Snijder 2008	"Innovation routine: how managers can support repeated innovation". In ***Stichting Management Studies***.	Theoretical and Empirical research studies	Emphasize that most innovations are incremental	Big and small companies	Private and public companies
Michael Harris and David Albury 2009	"The Innovation Imperative" in ***NESTA ' Books***	Based on the experiences of the authors	Radical and social innovation	Big companies	Public sector
Jung Su Kim and Goo Hyeok Chung 2017	Implementing innovations within organizations: a systematic review and research agenda. Published in **Innovation, Volume 19, 2017 - Issue 3**	Systematic review of the existing studies on innovation implementation.	NA	NA	NA

ISSN: 2455-8834

Volume:06, Issue:12 "December 2021"

Innovation and diversity are both multidimensional terms and definitions for them are as varied as the number of academic disciplines, policy makers, and business leaders that specialize in them (EU report 2013-2017).However, for the purposes of this study, it is important to have a clear insight that captures the core of the academic definitions and matches this with the reality of business practices. Innovation is not a new phenomenon. However, it has not always got the scholarly attention it deserves. For that reason, many definitions were given since Schumpeter made its fundamental concepts.Usher (1955) describes the innovation as the process of perception of an unsatisfied need, setting the stage following the primary act of insight, critical revision and development. The Organization for Economic Cooperation and Development (OECD) had given the following definition in 1981 "Innovation consists of all those scientific, technical, commercial and financial steps necessary for the successful development and marketing of new or improved manufactured products, the commercial use of new or improved processes or equipment or the introduction of a new approach to a social service. R&D is only one of these steps."

"Industrial innovation includes the technical, design, manufacturing, management and commercial activities involved in the marketing of a new (or improved) product or the first commercial use of a new (or improved) process or equipment" (Freeman 1982).

Innovation is the specific tool of entrepreneurs, the means by which they exploit change as an opportunity for a different business or service." (Drucker 1985).

Innovations are new ideas that consist of: new products and services, new use of existing products, new markets for existing products or new marketing methods (Simmonds 1986).

Harianto and Pennings (1992) showed that innovation in the firm depends not only building of it to develop its own projects but also on its ability to be in innovation networks, which allow it to acquire technologies in line with its own technologies and to share risks and costs of innovation.

Innovation refers to improving products, services and the existing processes (Leonard and Rayport, 1997).

Innovation begins with an idea and ends with the successful launch of a new product. Many authors describe the stage gate process in the theory. Garside for instance says that the model is based upon four interconnected stages: product and process design and development; concept validation; process implementation and verification; and manufacturing support (Garside, 1998).

ISSN: 2455-8834

Volume:06, Issue:12 "December 2021"

Tanguy and Villavicencio (2000) said that "innovation is the result of the creative action of organized players in the middle,that is to say that this is the implementation of collective knowledge and skills of stakeholders to improve or create new products and manufacturing processes".

Innovation can be defined as a process that provides added value and a degree of novelty to the organization, suppliers and customers, developing new procedures, solutions, products and services and new ways of marketing (Knox 2002).

"Successful innovation is the creation and implementation of new processes, products, services and methods of delivery which result in significant improvements in outcomes, efficiency, effectiveness or quality" (Albury 2005).

Innovation is "the successful development, implementation and use of new or structurally improved products, processes, services or organizational forms" (Hartley, 2006).

Innovation is "something new being realized with (hopefully) added value" (Jacobs and Snijders 2008) while they define the innovation process is defined as the development and selection of ideas for innovation and the transformation of these ideas into the innovation.

Popa et al. (2010) define innovation as the ability to develop new ideas and innovation has become a priority for many organizations. Intense global competition and technological development have made innovation be a source of competitive advantage.

Innovations vary along at least five dimensions; type and degree of novelty of the innovation, type and size of the organization in which the innovation project took place and fifth, the environment/sector in which the innovation was developed (Eveleen, 2010).

Scientists and different industries used a different approach from many perspectives regarding the definition of innovation, including radical or incremental changes in products, processes and markets (Popa et al. 2010).

Some features of innovation vary according to the organization considered, as some organizational characteristics vary depending on the type of innovation considered. (Downs and Mohr, 1976).Moreover, the definitions given to innovation determines the degree and nature of innovation in a particular organization. Innovation, as a result of the innovation process is strongly affected by how organizations define the concept of innovation.

2.1.2. Innovation: Drivers and Enablers

ISSN: 2455-8834

Volume:06, Issue:12 "December 2021"

Following what we have exposed during the previous point, innovation is very important for companies in order to reach the profit and the competitive advantage. However, it is not an easy task to be implemented within the organizations, private or public in different sizes. Thus many drivers and enablers of the innovation were found by researchers.

3.1.2. Innovation drivers.

In this part, we will highlight the drivers that impact on the innovation, they could be internal or external. A review of the literature was done through the study of many articles and books. Many drivers for the innovation adoption and implementation exist. It is critical for organizations operating in different business contexts to understand what these drivers are in their particular environment.

For this reason, many drivers are illustrated in the literature.

The innovation capability includes the following major elements: (1) competences, (2)processes, (3) ICT capability (ICT infrastructure and solutions), (4) collaboration (networking), (5) business intelligence, (6) creativity and (7) ability to renew (Malinen 2003).

Du Plessis, M., (2005) identified ten drivers can be summarized in seven factors: (1) reaching the competitive advantage; (2) an effective decision-making; (3) Organizational and geographical distribution; (4) collaboration; (5) Internal inefficiencies; (6) Knowledge hoarding and (7) Increased richness

Zakić et al (2008) underlined the following drivers: (1) industry maturity, (2) customer needs, (3) demand, (4) technological opportunity, (5) investment attractiveness, (6) company size, and (7) export orientation.

Alstete and Halpern (2008) found in their study sixteen drivers resumed into five groups: (1) Knowledge-centric drivers; (2) technology drivers; (3) structural drivers; (4) process focused drivers and (5) economic drivers.

As is evident, different sets of drivers have been put forward by different authors. In spite of this, they can possibly be grouped into a number of generic factors. However, we should also consider the needs and situations of organizations working in different industries and sectors when studying the innovation drivers.

ISSN: 2455-8834

Volume:06, Issue:12 "December 2021"

Furthermore, there are some distinctive issues (supply chain problems and changing requirements, program delays, aging workforce, the loss of technical talent and technical difficulties) that require considerable attention some this specific sector.

In order to address these issues, many authors propose common drivers that motivate most of organizations to adopt an innovation practices

- Enhancing the competitive advantage;
- Effective collaborative project;
- Increasing NPD flexibility;
- Improving employees' skills;
- Satisfy customers' needs.

Analyzing what drives an organization to implement innovation doesn't give a complete understanding nor a standard framework. Then other factors should be taken into consideration as the sector of activity, the type of industry, missions and visions of the company as well as the role of the firm into a collaborative ecosystem. To complete this analysis, the next point will study factors that facilitate innovation at organizations.

3.1.3. Innovation Enablers.

Innovation enablers refer to the key factors that determine the effectiveness of executing innovation practices within the organization, which are the driving force that solidifies innovation.

Skyrme and Amidon (1997) highlighted six key success factors, including a (1) strong link to business imperative; (2) a compelling vision and architecture; (3) leadership; (4) culture; (5) continuous learning; and (6) a well-developed technology infrastructure.

Civi (2000) lists four factors that are needed to be successful in innovation processes: (1) identify the business problems and develop a clear set of goals and objectives (2) adapt all level managers to the process, (3) help the companies to change their organizational culture to implement innovation, and (4) provide access to knowledge using various networks and technologies.

Edgett and Jones (2008) have suggested ten tips in order to implement successful innovation.

1) A complete and credible process meeting the needs of the organization.

2) A visible and meaningful Leadership Support improves the chances of success.

ISSN: 2455-8834

Volume:06, Issue:12 "December 2021"

3) A sufficient and appropriate resources by assigning the best people with the best skills to the project and giving them the time they need to do the work.

4) A clear definition of roles and responsibilities helps people to see how they can contribute, and more motivated of the new way of doing business.

5) A good strategic implementation approach describing goals and capabilities.

6) An effective communication and marketing Plan to inform and Develop a communication plan early.

7) A use of metrics to track the process Performance.

8) A clear insight of the impact on the company's Culture and Systems by understanding where the high-risk areas might be and what barriers exist that will need to be overcome.

There is ongoing debate on what is the most important enabler for innovation. A number of management analysts contend that technology is the most important. Others consider people to be the most important in innovation and argue that innovation initiatives that focus mainly on technology can and do often fail.

A review of the literature reveals that there are many enablers that are known to influence innovation. These enablers can be broadly classified into either a social (culture, people) or technical perspective, with the latter covering information technology infrastructure.

Employee cultural background plays an important enabler for the innovation (Skyrme and Amidon 1997, Civi 2000, Edgett and Jones 2008, Rosenbusch et al. 2009). Also, Nathan & Lee (2013) found that companies with diverse management are more likely to introduce new product innovations than are those with homogeneous team.

3.1.4. Innovation toward NPD.

The literature review identifies various different models that attempt to explain how the innovation process works. It is useful to present the evolution of these various models.

As mentioned earlier in the scope of the study, the new product development is considered as the fruit of any innovation model. Thus the first part will focus on the innovation model, while the second one on the NPD features and process.

ISSN: 2455-8834

Volume:06, Issue:12 "December 2021"

3.2 Innovation Models

The models of innovation can be classified based on the history of the technology and the impact of the innovation processes in the companies' competitive advantages.

2.1.3.1. Technology-Push Model. The 1950s were a period of post-war recovery where demand exceeded production capacity. Economic growth came from new technological sectors. As such the dominant corporate strategy emphasized R&D and manufacturing. During this period, the predominant model of innovation was the technology-push model, also known as the linear model. (Rothwell, 1994).

The linear model implicitly assumes that the market is a ready sink for the output of R&D. Therefore, more R&D would yield more innovations beneficial to the market and society at large. It is widely recognized now that this model is inadequate for depicting the process of innovation.

The major weakness of the linear model is the absence of feedback paths, within the development process and from the market. Informational feedback such as this is necessary to serve as inputs to ongoing performance evaluation of the firm. Kline and Rosenberg (1986).

2.1.3.2. market-pull Model. The latter part of the 1960s was an era of corporate growth. Companies were diversifying their product offerings to meet intensifying competition. There was a growing emphasis placed on marketing as a strategy. Innovation studies carried out during this period stressed the role of the market in the innovation process. Customer needs were seen to be driving the innovation process, hence the market-pull model (Rothwell, 1994).

In the market-pull model, the key input to the innovation process is customer needs. The market was seen as a source of ideas for directing the activities of R&D. However, this model, like the linear model, neglects the other inputs that are necessary for successful innovations (Neely, 1998).

One of the most common issue in a linear model is the lack of coordination between designers and technicians. Designers often design without regard to technical needs and constraints. And often technicians make changes to the design without understanding the designers' objectives.

2.1.3.3. Integrated Model. Based on the limitations of the previous models, it is clear that innovation is a non-linear process, due to its complexity. That led Japanese automobile companies to adopt the integrated model of innovation. It was found that the Japanese approach to product development was based around a high level of functional integration and parallel

ISSN: 2455-8834

Volume:06, Issue:12 "December 2021"

activities across functions, whereby information sharing in the form of joint meetings across functions were commonplace.

This model promotes parallel cross-functional development and more effective overall integration, which leads to higher information processing efficiency. A key element of competition in the 1980s was time to market. Many Japanese firms were able to maintain their competitive advantage by the very nature of their innovation process. However, this model does not allow an inter-organizational innovation processes.

2.1.3.4. Decision-Stage-Model. The Decision-stage models have various names in practice: Phased Project Planning, Gating System, Stage-Gate System or Phase-Gate System etc. Their characteristic is that the process consists of Stages which are always followed by Gates (Parry & al 2008).

The first decision stage model was the Phased Project Planning model of NASA. This system reduced technical risk, but it made the whole process cumbersome because it requires approvals and severe control before passing to the next stage. However, one of the most used and recognized decision-stage models is the Stage-Gate System developed by Cooper. The main difference from the Phased Project Planning model is that the Stage-Gate System is multi-functional and consists of parallel activities, carried out by people from different functional areas (Cooper and Kleinschmidt, 1993).

Stage-gate model is used by companies developing new products. It has a great deal being effective in controlling product quality and development expense.

2.1.3.5. Network Models. Nowadays, businesses are increasingly relying on knowledge networks to support innovation and create competitive advantage. The scope of knowledge required in many industries is far greater than any individual can master, so companies must tap into networks that cross organizational boundaries. Some of these networks are global in scale, linking firms and individuals from around the world to create new knowledge and develop new products and services. When new products are conceptualized, they need to be designed, which involves design and engineering. Products need also to be produced, which involves production management. And finally, products need to be marketed and sold to customers, which include marketing and finance. So, the activities related to new product development are diverse: concept development, development of prototypes, design specifications, engineering, screening, production, business analysis, cost analysis, test marketing, and so on.

ISSN: 2455-8834

Volume:06, Issue:12 "December 2021"

Network models suggest that the new product development should actually be seen as a process of accumulation of knowledge from a variety of different inputs such as marketing, research and development, and manufacturing. The network models represent the more recent thinking in the area of new product development, as it stresses the role of knowledge in the new product development process: knowledge is seen as gradually accumulating in the new product development process over time, as a snowball that gains in size as it rolls down a snow-covered mountain. (Trott 2005).

3.3 New Product Development Process

In many cases, the processes for designing the new product development (NPD) are not well understood. Which often made firms failing their innovations even there are great ones (Post et.al,2009) (Hobday, 1995). In order to reduce the high incidence of new product failures many models have been proposed. Modeling new product development processes has become increasingly difficult. Given the complexity of the concept and diversity of its usage in the literature. Understanding the NPD process is critical to practitioners who want better performance and to build competitive advantage out of new product development (Bentahar, 2017) (Jones et al,2020).

Understanding the NPD process is equally important for academic scholars (Wind and Mahajan, 1988). However, there is no model that is comprehensive enough to comprehend the complexity of the concept (Tidd and Bodley, 2002.). Some authors even claim that different paradigms should apply when different types of new products are involved and even the term used to describe the process should be different (Lynn et al, 1996.). Therefore the requirement of clarifying the confusion and providing a platform has never been stronger (Saren, 1994) (Lee and Nathan, 2010).

Models are a useful aid to communication and understanding when studying a process. There are various NPD process models, the most common of which are: Departmental-stage models, Activity-stage models, Decision-stage models, Conversion-process models, and Network models (Saren, 1984) (Peterson et al. (1996).

However, new economy, ICT's and virtual economy, have pushed researchers to create new models to adapt the NPD process with the actual strengths and threats of the new business environment.

- **Activity Stage-Model and Concurrent Engineering Process**

ISSN: 2455-8834

Volume:06, Issue:12 "December 2021"

One of the most common issue in a linear model is the lack of coordination between designers and technicians. Designers often design without regard to technical needs and constraints. And often technicians make changes to the design without understanding the designers' objectives.

To create an efficient design and product, designers and engineers can't be expected to have enough technical knowledge. Which means technical staff should support them by giving them advices during the design process.

These issues can be solved by integrating technical and production consideration into a design process called Concurrent engineering (Eckert and Demaid, 1997).

Eckert and Demaid (1997) define as the concurrent engineering as the involvement of specialists in all the different aspects of design, manufacturing and marketing from the beginning of the design process to ensure that the concerns and requirements of all aspects of the design are taken into account throughout the design process.

Concurrent engineering model is defined by the Bridge field Group ERP as the process design methodology that includes simultaneous participation by engineering, operations, accounting, planning, customers, vendors and other functions. The goal is to reduce engineering design/introduction lead time and reduce or eliminate later changes and quality problems by involving cross-functional teams at the outset.

During the 90', many engineering companies performance has significantly improved through the introduction of concurrent engineering which became widespread used in the engineering industries, to improve the efficiency of the design process and reduce the time to market.

Concurrent engineering has garnered much attention from industry and has been implemented in a multitude of companies, organizations and universities, most notably in the aerospace industry.

Two concepts frame the concurrent engineering. The first is the necessity to take in consideration all elements of a product's life-cycle, from functionality, predictability, assembly, testability, maintenance issues, environmental impact and finally disposal and recycling, in the early design phases. The second one is that the preceding design activities should all be done concurrently (Lee, 1991).

Many benefits are providing by concurrent engineering such as reduced product development time and cost while the communication between people and groups will be improved. Examples from companies using Concurrent Engineering techniques show significant increases in overall

ISSN: 2455-8834

Volume:06, Issue:12 "December 2021"

quality, 30-40% reduction in project times and costs, and 60-80% reductions in design changes after release. (Stark, 1998).

Despite some successes, implementing concurrent development has proven difficult for many organizations. Ford and Sterman (2003) have mentioned many problems related to the implementation failure that influences firms seeking to put a wide range of process improvement tools such as total quality management, reengineering, and diverse best practices in product development.

- **Network Model**

Throughout this section, we have mentioned many times the importance that plays the knowledge to perform new product and innovation models. Nowadays, businesses are increasingly relying on knowledge networks to support innovation and create competitive advantage. The scope of knowledge required in many industries is far greater than any individual can master, so companies must tap into networks that cross organizational boundaries. Some of these networks are global in scale, linking firms and individuals from around the world to create new knowledge and develop new products and services.

When new products are conceptualized, they need to be designed, which involves design and engineering. Products need also to be produced, which involves production management. And finally, products need to be marketed and sold to customers, which include marketing and finance (Trott, 1998).

So, the activities related to new product development are diverse: concept development, development of prototypes, design specifications, engineering, screening, production, business analysis, cost analysis, test marketing, and so on. Between those activities, the knowledge flow takes a great importance, which represents the network models overview (Trott, 2005).

ISSN: 2455-8834

Volume:06, Issue:12 "December 2021"

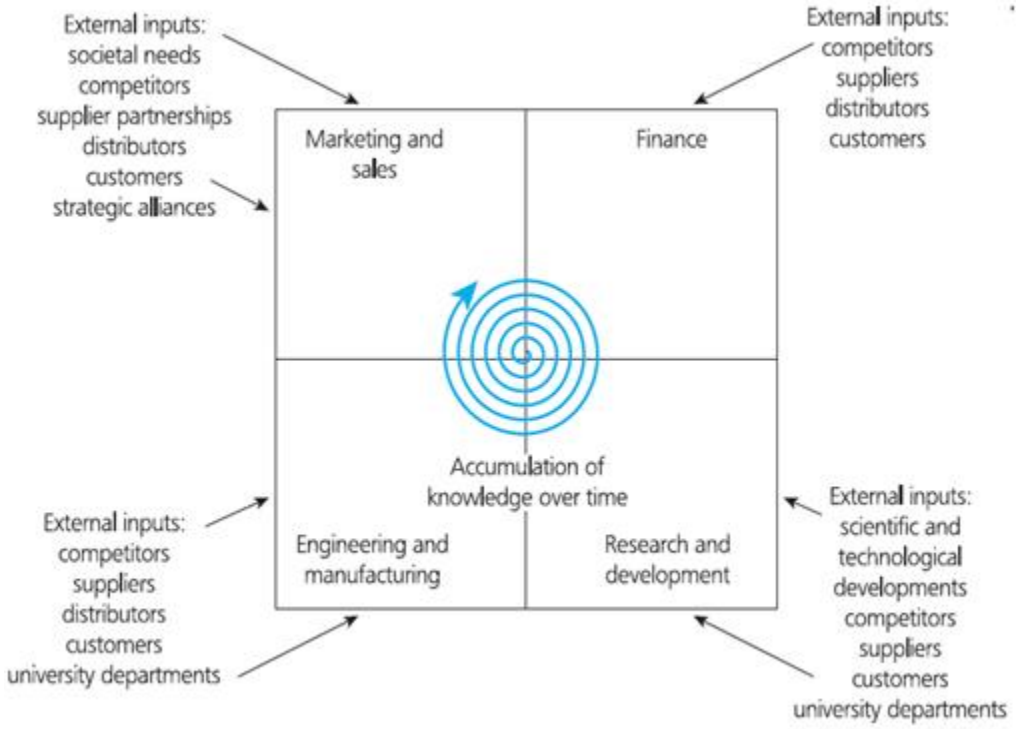

Figure 1. A network model of new product development (Trott 2005)

Network models suggest that the new product development should actually be seen as a process of accumulation of knowledge from a variety of different inputs such as marketing, research and development, and manufacturing. The network models represent the more recent thinking in the area of new product development, as it stresses the role of knowledge in the new product development process: knowledge is seen as gradually accumulating in the new product development process over time, as a snowball that gains in size as it rolls down a snow-covered mountain. (Trott, 2005).

The figure schematized by Trott, represents the process of accumulation of knowledge crossing continuously over different internal functions, through which both internal and external knowledge is integrated in the process. Four different internal functions are related to new product development: research and development, engineering and manufacturing, marketing and sales, and finance.

As the other models of new product development process consider it as more or less linear, the network model is truly a new way of seeing the new product development. Nearly all people actually involved with the development of new products reject the idea that a simple linear

ISSN: 2455-8834

Volume:06, Issue:12 "December 2021"

model could truly represent the reality of new product development, and this has also been confirmed by recent research suggesting that the process needs to be viewed as simultaneous and concurrent with cross-functional interaction (Hart,1993).

Network models are defined by knowledge rather than tasks. Then, companies that want to take part of the network models should be flexible and change radically because in work teams and project teams, managers generally predetermine major goals and the main nature of the joint enterprise, while there are negotiated among members into a network (Allee, 2003).

4. Diversity: Definitions, Dimensions and Effects

In what follows, the researcher will examine the organizational literature on diversity from three approaches: terminological, dimensional and practical. However, before beginning the review of the literature, it is essential to define the critical approach related to the practice of diversity management, which is the basis of our discussion.

Critical management studies draw on the critical tradition established since the 1920s. These challenge the foundations of the expansion of modern capitalism and mass society. The arrival of Theodor Adorno, Max Horkheimer and Herbert Marcuse, constituted what is known as the "Frankfurt School", has launched a tradition of research in the name of power and control (Omanović, 2006).

The various assessments of the effects of mass culture have generated the distinct work of the members of the Frankfort School who together constitute the critical approach. This results in different critical traditions (Burrel and Morgan, 1979)

In a study of diversity, which draws on the critical approach, Omanović (2006) considers that the work of the Frankfurt School provided the appropriate tools to develop a judgment capable of demystifying an ideology and considering the possibility of changing the existing domination ratios.

When it comes to diversity in the organization, this approach seeks to establish complex web of economic, social and political forces that constitute the positions of the dominant and marginally diverse employees, managers, interested academics and associated workplace and research practice (Jones and Stablein, 2006).

4.1 Diversity: Definitions

ISSN: 2455-8834

Volume:06, Issue:12 "December 2021"

As we highlighted out earlier, diversity has captured the interest of the organizational literature on management. It is therefore incumbent on us to explore diversity as it has been conceptualized in this literature, especially because of the plurality of concepts attached to it. In particular, the point is to bring out the cultural diversity of the different considerations that make up the term.

Thus, in our literature study of diversity in management, we encountered several terminologies:

- **"Diversity"** (Milliken and Martins 1996, Thomas and Ely 1996, Litvin 2001, Dick and Cassell 2002; Janssens and Steyaert, 2003; Thomas, 2004; Zanoni and Janssens, 2007);
- **"Global diversity"** (Nishii and Özbilgin, 2007);
- **"Workplace diversity"** (Elmuti, 2001, Bielby, 2008);
- **"Workforce diversity"** (Konrad 2003, Triandis 2003, Mor Barak 2005, Pitts and Wise 2009);
- **"Cultural Diversity"** (Leme Fleury 1999, Thomas and Ely 2001, Vallaster 2005; Ymen, 2006; Bariniaga, 2007).

However, there is an interesting fact to emphasize. We found that the term "cultural diversity became a fashion effect, as (Thomas, 1999) used the term "cultural diversity" in the organization, even if it is loosely defined. Also, Thomas and Ely (1996) proposed a model for managing diversity in the organization, using "diversity". Five years later, in 2001, they adopted the same model by applying it to three case studies. However, instead of talking about "diversity" as they did before, they chose to approach it in terms of "cultural diversity".

- **Diversity.**

Carters (1982), one of the first authors to focus on diversity in organizations, defined it as "People with different ethnic backgrounds, nationalities, age, religion and social class" (Janssens et al. Steyaert, 2003).

Diversity from this author's point of view is conceived as a demographic difference. Therefore, the difference, considered in the demographic variables, such as gender, nationality or age, will have an equal share in its influences on the organization's professional environment.

Stella Nkomo (1996) challenges this narrow way of understanding diversity. It considers that to speak only of diversity entails the risk of focusing on a universal aspect that does not consider the unequal differences underlying the terminology. It is then that one can question the usefulness of managing this "diversity" if the latter is presumed to be of equal importance for all its members (Nkomo, 1996).

ISSN: 2455-8834

Volume:06, Issue:12 "December 2021"

In this vein, Deborah Litvin (1997) has shown how "the discourse of diversity" is inspired by biological diversity and the human genome. In this perspective, diversity is not viewed through the different experiences of individuals. Moreover, the context in which its carriers present themselves is non-existent.

“The depiction of such groups as the repositories of diversity privileges a particular taxonomies of humanity as objective, natural and above all clear and obvious” (Litvin, 1997).

In addition, some authors, such as Janssens and Steyaert (2003), have criticized the sociological reductionism to which certain authors have limited themselves in their definition of diversity. However, their criticism did not prevent them from adopting the same conceptualization, by persisting in using the term "diversity".

In order to overcome the kind of contradictions that arise in researchers' statements, Nkomo and Stewart (2006) invite authors to specify the diversity on which their research will be conducted.

- **Cultural diversity**

The adoption of the terminology "cultural diversity" reflects our position in relation to the literature and at the same time decides how we will grasp it along the way. Many terminologies such as inter-culturalism, multiculturalism or multiculturalism are close to that of cultural diversity. Consider at the beginning that these terminologies are commonly interested in how a society interacts with the cultures and identities that coexist in it and whose exchanges adopt various modalities.

Cultural diversity goes beyond a concept based on cultural difference and comes from "the plurality of identities that characterize groups and societies" (UNESCO, 2001). Therefore, it is not only related to one aspect of cultural difference. As Dietz (2007) points out, cultural diversity is the inclusion of all cultures and describes it as “a situation that includes representation of multiple groups within a prescribed environment, such as university or workplace” (Dietz, 2007).

Cultural diversity goes beyond the visible landmarks traditionally considered to define cultural identity. It does not concern a single dimension of cultural diversity and is not restricted to a single category. It is a question of including all the identities that appear in the organization. Cultural diversity also implies the multiplicity of policies and practices. Its definition is the one that goes against a single approach (Mattelart, 2002).

ISSN: 2455-8834

Volume:06, Issue:12 "December 2021"

Cultural diversity engages a practice that attests to the singular experience of cultural identity. It recognizes the nuances that underlie differences and advocates for a practice that is in the interest of cultural diversity itself, and not just in terms of organizational productivity (Barth, 2007).

- **Global Diversity**

Researches that use this term are distinguished by their international interest for the study of diversity. Nishii and Özbilgin (2007) define diversity in a global context as follows:

"At the most general level, we see global diversity as referring to two primary issues. The first is the management of diversity across countries, with the goal of understanding how each country might differentially define and conceptualize diversity from a social, legal and political perspective (...) we also see global as referring to the management of cultural diversity across employees and countries within a global firm. and political perspective (...) we also see global as referring to the management of cultural diversity across employees and countries within a global firm."

This trend is opposed to "Global Business", which in turn echoes the "global village" (McLuhan, 1967) and the homogenization of societies. Authors who explore diversity in a global context denounce globalization and its neglect of cultural specificities in unique contexts (Walsham 2001, Nishii and Özbilgin 2007).

For these authors, the standardization of culture is impossible, as long as cultural practices are rooted in the local context and as long as individuals appropriate and reproduce the practices-which are believed to be standard-according to their creativity (Robertson, 1992 in Walsham, 2001), creating more diversity. This particularization of the global, can itself extend out of its territory of origin to become an international practice, thus creating an even more complex world (Morin, 2008).

Diversity in the global context thus forms the antithesis of the discourse that advocates the homogeneous aspect of cultural practices as a consequence of globalization. From an internal practitioner approach, the finding is similar.

The management of cultural diversity in a global context, as presented by authors such as Mor Barak (2005) and Nishii and Özbilgin (2007) imply that cultural specificities are to be considered in an international work context if they want to be "inclusive" (Mor Barak 2005, Nishii and Özbilgin 2007).

ISSN: 2455-8834

Volume:06, Issue:12 "December 2021"

The exclusion, according to the authors, is the result of the failure of the understanding of cultural difference, as in the case where the management practices a model. The management, often Western, "imported" which does not denote a sensitivity to the cultural context (Nishii and Özbilgin, 2007: 1886).

While some multinationals use organizational policies and global management practices, which come from the head office, the authors argue that managing cultural diversity in an international context means recognizing cultural and cultural differences in the first place, not to ignore them. This way of doing things is considered a performance tool (Nishii and Özbilgin 2007).

- **Workplace diversity**

The main element that distinguishes this terminology is that it is delimited by the organizational place where diversity is lived. The latter is thus apprehended in its relationship with the organization and considered at first sight as an economic resource (Konrad, 2003).

In this perspective, it is important to understand the economic and political motivations that motivate organizations to recruit in diversity. Thus, Elmuti (2001) proposes two hypotheses in relation to these motivations.

The first view is that the organizational policy for hiring diversity stems from the national equity policy. The organization is thus the mirror of the macro society in terms of diversity and the management applies the social law to avoid legal proceedings.

The second hypothesis is that it can also be a desirable initiative on the part of management, which considers diversity as an economic advantage that it wants to take advantage of (Elmuti, 2001).

In this approach, Bielby (2008) proposes the "workplace bias" to discuss the inequalities that arise in the workplace in the case of a lack of clear policy (example of career, recruitment, transfer) on diversity. Based on studies in sociology and diversity management, he considers that leaving room for the subjective criteria of the recruiter, risk of setting up a selection that favors individuals belonging to the same culture and lead to discriminatory recruitment.

Indeed, according to a set of works presented by the author, the individual is at the mercy of personal decisions that will interfere, implicitly, in his objectivity, regardless of his intention. That's why he underlined the fact that the organizational policies are fundamental.

ISSN: 2455-8834

Volume:06, Issue:12 "December 2021"

Therefore, it becomes important to examine how diversity is represented in the organization's strategy (Thomas, 2006) or the discourse of human resources managers (Zanoni and Janssens, 2004) in order to concretely see how whose diversity they conceive.

- **Workforce diversity**

The focus here is on the actors and not on the job site. The authors who use this terminology, evoke the experience, the performance (Jehn and Bezrukova, 2004) and the knowledge brought by the diversified workforce.

The organization in this case only makes sense through the diversity of its employees. Some authors use the terminology "workforce diversity" to distinguish social diversity from economic diversity. Seymen (2006), for example, sees that the diverse workforce is that of the organization, while cultural diversity represents "a singular heritage" and (Chevrier, 2003) said that Cultural diversity paralleling workforce diversity in organizations stands in the forefront.

The culture according to this author, constitutes the line of demarcation between two distinct environments: the social on the one hand, animated by the culture, and on the other, the economy which does not make room for the culture, here seen as of the "private" order.

Barak (2005) sees that culture is a factor that decides how to accept or reject the employee in the organizational sphere. He said that “Workforce diversity refers to the division of the workforce into distinct categories that have a perceived commonality within a given cultural or national context and that impact potentially harmful or beneficial employment outcomes such as job opportunities, treatment in the workplace and promo prospects –irrespective- of job related skills and qualifications” (Barak, 2005).

The concept of workforce diversity and organizational performance has much been debated in the last five decades. Workforce diversity and innovation instead was rarely debated as most of researches focus in the social and managerial part.

Diversity is defined as the set of measures taken by employers to recruit, retain and develop employees from various social categories. It is also understood as increasing the presence in the enterprises of employees of nationality, gender, of different ethnic origins (Bebear, 2004).

2.2.2. Diversity: Dimensions

Employers, and more specifically HR, are aware of diversity management issues, and in a surveydone by the French association ANDCP (2004)ranked third in their concerns about the

ISSN: 2455-8834

Volume:06, Issue:12 "December 2021"

evolution and promotion of the HR function and issues mobility and career management (Moyer 2006 and Encyclopedia of Human Resources 2009).

The economic imperatives and the expectations of the employees are mixed in the aspiration to a greater human diversity in the company:

At the global level, diversity management encourages the recruitment of global talent pool. Managing diversity also means renewing and increase the pool of human resources available to the company.

Managing diversity is seen by many employers practicing it, as a human resource management through the strengthening of a culture of based on the principles of equality and respect for differences in the in which everyone believes they can find their place. This universal language harmonized well with the globalization of the economy and an increasingly more globalized human resources by multinationals.

Moreover, managing diversity means taking into account the diversity of people even though they are heterogeneous. According to Peretti (2004), a new type of employee is being born who wants work to amuse him, a factor for enrichment and responds to its aspirations; when it is not found, in terms of personal values, in its work, it hesitates less and less to leave.

Thus, the coincidence of the values of the company and the employee is an issue centralized management of human resources in that it plays positively on the loyalty of the workforce, thus impacts the turnover and increases the motivation and involvement of employees.

From, what is mentioned, it is clear that diversity is linked to the ethical, economic and social dimensions which can be explained as follow.

Ethical Dimension: Managing diversity is seen as a means of respecting difference and constitutes a commitment by the employer to its employees. The integration of minorities is, for example, called to be a fundamental value, a source of social cohesion.

A current research in economics develops the idea that efficiency and equity are two concepts that are going to be more and more linked; these are not perceived as the two terms of an arbitration at the end of which, if one wins, the other necessarily loses, but there are complex interactions between the two notions. If one considers that wages must be conceived as a set of rules that play on different registers of the wage relationship, the standards of equity and efficiency intermingle to form different models. The most classic example of the synergies between efficiency and equity resulting from the articulation of different standards is provided

ISSN: 2455-8834

Volume:06, Issue:12 "December 2021"

by unemployment insurance, which allows the unemployed worker not to sell off his labor force while preserving his human capital.

Economical Dimension: A diversified workforce reflects social reality and brings companies closer to their clientele. Diversity is seen as a resource for access to diverse markets. In the tertiary sector, which is a highly growing sector and generates multiplied interpersonal relationships, the company which does not take into account the diversity of its clientele through the composition of its workforce risks reducing its competitive advantage.

Social Dimension: Managing diversity means managing the workforce in a socially responsible way and redefining the relationship between company and employee. The difficulty encountered by companies that are aware of the diversity of their workforce is that the statistical information available to their employees concerns only their nationality; thus, today, the employer can give the percentage of French and foreign employees but cannot go back to a finer level.

From a corporate social responsibility perspective, the need to disseminate this downstream policy on subcontractors is also fundamental; the signing of common protocols or charters that encourage them to respect diversity can be operational tools.

2.2.3. Diversity: Effect on the organization

Work that has examined the effects of diversity on the organization is based on the assumption that the latter destabilizes the established order and is an obstacle to the proper functioning of the organization (Brett et al., 1999).

Therefore, the authors' concern is then to study these reactions with the double aim of reducing uncertainty and benefiting from the presence of diversity.

From the organizational domain on the effects of diversity on the organization, two works remains the most cited in the literature. The first is that of Williams and O'Reilly (1998). The authors conducted a "laboratory" study after which they attempted to identify the positive and negative effects of diversity.

The second work is that of Milliken and Martins (1996). It is developed on the basis of a literature review on the effects of diversity on the organization. The authors did not consider a specific organizational context to carry out their studies. The issues that we describe in the following are of a general nature.

ISSN: 2455-8834

Volume:06, Issue:12 "December 2021"

However, both studies have emphasized the dual effects, both positive and negative, of diversity on organization, using the term "double-edged sword" (Milliken and Martins, 1996; Williams and O'Reilly, 1998)

The researcher will focus on these two authors to briefly present different effects that authors attach to diversity. They are orders: Affective/Cognitive and symbolic/communication-oriented.

Affective/Cognitive

According to Milliken and Martins (1996) and Williams and O'Reilly (1998), there is little research on the emotional effects of diversity in the organization. They argue that affections are related to the observable dimensions of diversity. Milliken and Martins (1996), for example, consider that aspects such as race and gender generate categorization practices, which implies a relationship of dominance and, as a result, lead to negative emotions.

Barak (2005), on the other hand, argues that Affective is the result of "subtle" exclusion practices experienced by certain groups in the workplace, such as their exclusion from information networks. This creates a negative impact and generates isolation.

The cognitive effect, on the other hand, has attracted the attention of most authors who have been interested in the effects of diversity in the organization.

Milliken and Martins (1996) and Williams and O'Reilly (1998) have shown the creative side and innovation brought by diversity. The authors explain this functional contribution to the permanent contact of different cultural identities with the members of their own groups. In addition, the various previous professional experiences of diversity contribute to better decision-making.

However, Milliken and Martins (1996) point out that research on the functional impact of diversity does not specify whether its origin is related to education or culture and the personality of diversity.

It remains that the cognitive effects of diversity derive from the context in which they present themselves (Cox, 1996). The latter is the element that can promote a professionally constructive climate as he clearly mentioned “the most far-reaching determinant of how increasing diversity will affect work team and organization performance is the extent to which the diversity is managed (Cox, 1996)

Symbolic/Communication-oriented

ISSN: 2455-8834

Volume:06, Issue:12 "December 2021"

Milliken and Martins (1996) and William and O'Reilly (1998) point to the few studies that examine cultural diversity from a symbolic perspective. However, when it comes to the linguistic dimension, it is considered in terms of the barrier to interaction between the different members of the organization, because of the accent, the interpretation or the direct and indirect mode on which the communication of certain cultural communities is based (Brett et al., 2006).

Feely and Harzing (2003) conducted a study of language communication strategies favored by multinationals in constant contact with other cultures and languages. They mention that the practice of a different language is to create a tension between the employees of the head office and those of the subsidiaries. They may develop mistrust because of restricted communication to affiliates who speak the language spoken in the main office.

To deal with communication problems, the authors see that organizations are implementing language strategies. These include the practice of a common language and language courses offered by the organization to communicate with the organization's clients. However, these strategies have their limits.

Regarding the second strategy, it represents a privilege dependent on the economic benefit of the organization in question, this strategy is based on training.

So, the organization responds differently to cultural groups as it perceives them as a "threat". On the basis of this consideration, some authors position themselves to the antithesis of this negative discourse. Hoecklin (1995), for example, calls for changing this "pre-acquired" on diversity by considering it rather as a positive challenge. He proposes seven years later the following statement “To think about cultural differences as a source of competitive advantages, there must be a shift in assumptions about the impact of cultural differences...Culture should not simply be seen as an obstacle to doing business across cultures. It can provide tangible benefits and can be used competitively” (Hoecklin, 2002).

2. 3. Diversity and Performance

A number of studies have examined the nature of the relationship between diversity management policies and the impact on business performance. Essentially Anglo-Saxon, these give contrasting results, sometimes contradictory, as the variables tested can be different and the context in which the companies also evolve.Thus, two types of performances are reached by workforce diversity.

2.3.1. Diversity and marketing

ISSN: 2455-8834

Volume:06, Issue:12 "December 2021"

The first advantage of the diversity underlined by the employers in the survey done by the ANDCP (2004) is that they overcome the shortage of workers is followed by the strengthening of cultural values within the organization, promotion of the reputation of the company, an asset in retaining talented employees, increasing motivation and efficiency of staff, increasing the spirit of innovation and creation of staff, the increase in the quality of service and the satisfaction of customers.

Reflecting the diversity of the market can cover two types of benefits; on the one hand, a diversified workforce allows the company to better reflect the diversity of the company, to better understand the needs of its current and potential clients and thus to better respond to them and thereby to access new markets (Osborne, 2000). These arguments, if they are admissible for gender differentiation (men and women, by their nature, have different needs), are not necessarily so when the discussion about visible minorities because it is tantamount to giving them different consumer identities of those of others.

On the other hand, in terms of image, managing diversity within the company is a communication tool and a marketing tool that can improve the business performance of companies and become a potential source of competitive advantage; if consumers believe that a diverse workforce is an additional attribute for a company, those with this attribute will be able to increase their goodwill (Troske, 2001).

2.3.2. Diversity and Knowledge

The most important impact of diversity is the increase of knowledge sharing and implementing an efficient knowledge management.

In this perspective, Cummings (2004) found in his research on 182 work groups, that the value of external knowledge sharing increases when work groups are more structurally diverse. A structurally diverse work group is one in which the members, by virtue of their different organizational affiliations, roles, or positions, can expose the group to unique sources of knowledge.

A decade later, Maham (2014) found that cultural diversity among workforce increases the knowledge sharing and thus innovation.

Also Campbell (1960) shows a correlation between knowledge sharing and the innovation process. "Creating new dominant designs successfully depends significantly on the discovery of

ISSN: 2455-8834

Volume:06, Issue:12 "December 2021"

new tacit knowledge, and then transform it into explicit form so that the innovation team can discuss, define and apply his work in (Miller and Morris, 1999).

Indeed, according to other studies, sharing tacit knowledge plays a larger role in the innovation process as explicit knowledge (Hall, 1993; Grant and Spender, 1996). But the most difficult task lies in the identification of preservation, enhancement or refresh tacit knowledge.

Drucker (1996) noted that knowledge management is central to how existing knowledge can best be applied to produce new knowledge. In other words, the production of new knowledge depends on the knowledge held by the individual, group or organization. This leads us to assume that the key to a successful innovation process lies in the mobilization and conversion of tacit knowledge, in other word, leads to knowledge management.

Also, Tanguy and Villavicencio (2000) said that "innovation is the result of the creative action of organized players in the middle that is to say that this is the implementation of collective knowledge and skills of stakeholders to improve or create new products and manufacturing processes".

Martinet (2003), showed that innovation strategies are similar to processes of organizational knowledge creation. The success of these processes depends on the level of exchange between explicit and tacit knowledge held by individuals, and the development of spiral amplification, as suggested by the SECI model (socialization, externalization, Combination, Internalization) proposed by Nonaka and Takeuchi (1995).

Although, researchers have demonstrated the performance of diversity on the company as well as its positive impact, however, diversity has other drawback as inequality and discrimination.

On the other hand, none of those studies has studied the impact of diversity on innovation which makes this research facing the challenges of the lack of reports and data. For clarifying the use of this literature review, a theoretical framework will be presented in the next point in order to describe the roadmap of this research.

5. Conclusion

The rapid increase in technology within the workplace required new skills and flexibility on the part of the employee. Organizations began to see that they needed to coordinate information and knowledge in a new way. This meant helping employees to respond to change, encourage creativity and innovation and learn and improve productivity. We have tried to cover researches where cultural diversity directly or indirectly affects innovation performance. Literature for

ISSN: 2455-8834

Volume:06, Issue:12 "December 2021"

review was chosen in random way. Some reviewed papers are from same category, but we did not take into consideration papers with same results. Therefore, papers can be very close in results, but there no papers with identical result are included. We tried to use the discussion method in analysis of these papers and had no attempt to make any quantitative analysis, which can be used in future researches. Cultural differences are the biggest problems for firms but in the same time as studies show carry opportunities to innovate more thus to be more successful in competition. How to solve the cross-cultural problems or how to use the benefits of cultural heterogeneity deserves the long-term attention and study. Results of studies which attempt to find the answer weather cultural diversity has negative or positive effect on innovation performance varies. We defined that existence of foreigners in firms can influence on innovation performance, as well as that diasporas can play significant role in enhancing the innovativeness. In addition, we found from the review the high importance of city and migrant diversity for firms aiming to increase its innovativeness. Results of the literature review reveals a considerable spurt and existence of a lot of knowledge gaps in this field. The aim of this study was to provide an up-to-date and detailed review of the literature on relationship between innovation and cultural diversity , we found there are high relationship between diversity and organizational performance.

References

1. Bailey, S. (2014). Why Diversity Can Be Bad For Business. Forbes May 2014. Published in https://www.forbes.com/sites/civicnation/2017/09/28/13-revolutionary-women-who-deserve-a-statue/#23f04fe93700

2. Bourke, J; Garr, S; Berkel, A; Wong, J. (2017). Diversity and inclusion: The reality gap. Deloitte, 2015.https://www2.deloitte.com/insights/us/en/focus/human-capital-trends/2017/diversity-and-inclusion-at-the-workplace.html

3. Creswell, J. W. (2003). Research Design: Qualitative, Quantitative, and Mixed Methods Approaches. Sage Pubblications.

4. Dillman, D.A. (1978) Mail and Telephone Surveys: Total Design Method. New York: John Wiley.

5. Drucker, P. F. (1985). Innovation and Entrepreneurship. HarperCollins Publishers.

6. Edquist, C. 2000. The systems of innovation approach and innovation policy: An account of the state of the art. DRUID Conference.

ISSN: 2455-8834

Volume:06, Issue:12 "December 2021"

7. Freeman, C. (1982). The Economics of Industrial Innovation. University of Illinois at Urbana-Champaign's Academy for Entrepreneurial Leadership Historical Research Reference in Entrepreneurship. Harvard Business Review. December 2013.

8. https://www.theguardian.com/media-network/media-network-blog/2014/mar/27/diversity-innovation-startups-fortune-500-companies

9. Jones, A. (2006). Rising to the challenge of diversity A discussion of the business case. Published in http://www.diverseethics.com/files/resources/WORK-DIVERSITY/178_Diversity_Report-Work%20Foundation.pdf

10. Larson, E (2017). New Research: Diversity + Inclusion = Better Decision Making At Work. Published in https://www.forbes.com/sites/eriklarson/2017/09/21/new-research-diversity-inclusion-better-deci sion-making-at-work/

11. Leonard, D. A., and Jeffrey Rayport. "Spark Innovation Through Empathic Design." Harvard Business Review 75, no. 6 (November–December 1997): 102–113. (HBS Working Paper No. 97-606.)

12. McKinsey & Co. (2015). Diversity Matters. Published in https://www.mckinsey.com/business-functions/organization/our-insights/why-diversity-matters

13. Pennings, J. M., & Harianto, F. (1992). Technological networking and innovation implementation. Organization science: A journal of the Institute of Management Sciences, 3(3), 356-382.

14. Popa, H.L., Mocan, M.L., Izvercianu, M., & Pater, R.L. (2010). DAAAM International Scientific Book 2010, Vol. 9, Chapt.Nr.42, Clustering and Clusters. A Systemic Approach. B. Katalinic (Ed.), Vienna: DAAAM International Publishing, pp.411-420.

15. Sarah. (2015). The Importance and Benefits of Diversity. Retrieved April 3, 2016, from The Importance and Benefits of Diversity.

16. Schumpeter, J.A. (1947). The Creative Response in Economic History, Journal of Economic History, Vol.VII, No.2, pp. 149-159.

17. Sherbin, L. Hewlett, S., and Marshall, M. (2013) How diversity can drive innovation.

ISSN: 2455-8834

Volume:06, Issue:12 "December 2021"

18. SHRM. Society for Human Resource Management. (1998). Available on http://www.shrm.org/press/releases/980803.htm.

19. Simmonds, K., (1986). Marketing as innovation; the eight paradigm, Journal of Management Studies, Vol.5/ No.23

20. Stake, R. E. (1995). The art of case study research. Thousand Oaks, CA: Sage.

21. Usher, A.P. (1955). Technical Change and Capital Formation, in National Bureau of Economic Research, Capital Formation and Economic Growth. Princeton University Press, Princeton (1955), pp. 523-550

22. Yin, R. K., (2003b). Case study research: Design and methods (3rd ed.). Thousand Oaks, CA: Sage Publications, Inc.

23. Hofstra, B., Kulkarni, V. V., Galvez, S. M. N., He, B., Jurafsky, D., & McFarland, D. A. (2020). The diversity–innovation paradox in science. *Proceedings of the National Academy of Sciences*, *117*(17), 9284-9291.

24. Fadeeva, Z., & Mochizuki, Y. (2010). Higher education for today and tomorrow: university appraisal for diversity, innovation and change towards sustainable development. *Sustainability Science*, *5*(2), 249-256.

25. Østergaard, C. R., Timmermans, B., & Kristinsson, K. (2011). Does a different view create something new? The effect of employee diversity on innovation. *Research policy*, *40*(3), 500-509.

26. Hewlett, S. A., Marshall, M., & Sherbin, L. (2013). How diversity can drive innovation. *Harvard business review*, *91*(12), 30-30.

27. Rolston, J. S., & Cox, E. (2015). Engineering for the real world: Diversity, innovation and hands-on learning. In *International perspectives on engineering education* (pp. 261-278). Springer, Cham.

28. Vence, X., & Trigo, A. (2009). Diversity of innovation patterns in services. *The Service Industries Journal*, *29*(12), 1635-1657.

29. Post, C., De Lia, E., DiTomaso, N., Tirpak, T. M., & Borwankar, R. (2009). Capitalizing on thought diversity for innovation. *Research-Technology Management*, *52*(6), 14-25.

ISSN: 2455-8834

Volume:06, Issue:12 "December 2021"

30. Jones, G., Chace, B. C., & Wright, J. (2020). Impact of diversity on innovation. *International Journal of Innovation Science*.

31. Peterson, R. A., & Berger, D. G. (1996). Measuring industry concentration, diversity, and innovation in popular music. *American Sociological Review*, *61*(1), 175-178.

32. Lee, N., & Nathan, M. (2010). Knowledge workers, cultural diversity and innovation: evidence from London. *International journal of knowledge-based development*, *1*(1-2), 53-78.

33. Hobday, M. (1995). Innovation in East Asia: diversity and development. *Technovation*, *15*(2), 55-63.

