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# KEY THEMES IN BRAND REPUTATION RESEARCH: A BIBLIOMETRIC ANALYSIS WITH VOSVIEWER SOFTWARE

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## ABSTRACT

**Purpose-** This study is designed to examine the bibliometric analysis of existing studies with VOSviewer to provide a perspective to researchers who will work on "brand reputation" in the field of brand management. The aim of the study is for managers and marketers to develop strong strategies to increase brand reputation, for academics to determine what the related concepts are that affect brand reputation and to investigate the literature in this context.
**Methodology-** The study included 77 studies with SSCI, SCI-Expanded and ESCI indexes in the Web of Science database. The downloaded data were evaluated by author, citation, journal, country, institution, keyword and abstract analysis.
**Findings-** As a result of the analysis, it was determined that the first study was conducted in 1991, the number of studies increased since 2018, researchers from the USA, England, Australia, China and India conducted more studies, and there were more studies in the USA, and the authors were mostly involved in a single study. In keyword analysis, the concept of brand reputation is mostly examined together with concepts such as reputation, corporate reputation, brand image, brand trust, brand equity, social responsibility, consumer behavior, brand awareness, brand loyalty, Twitter, brand recognition, public relations, consumer engagement, In the abstract analysis, it was observed that concepts such as reputation, corporate social responsibility, identity, attitudes, brand image, and consumers were examined**.**
**Conclusion-** In the conclusion and discussion part of the study, these findings were evaluated and new study suggestions were presented to the researchers.

**Keywords:** Key themes, brand reputation, bibliometric analysis, VOSviewer, web of science
**JEL Codes:** M30, M31, M39

## 1. INTRODUCTION

Creating a brand and ensuring its sustainability is essential in a competitive marketing environment, and brand reputation results from investments in effective and efficient branding activities. The creation of high-reputation brands is important in developing consumers' brand perceptions correctly and strongly and in terms of industrial customers' being able to reference and trust each other in their business processes. For this reason, managers and marketers should develop strong strategies to increase brand reputation, and academics should examine the associated concepts that affect brand reputation.

For academics working in brand management, it may be difficult to determine the antecedents and consequences of brand reputation, with which conceptual variables it is associated, with which concepts less research has been done, and how studies in this field have developed. The analysis technique that emerged to answer these questions and has been used in recent years is bibliometric analysis. With bibliometric analysis, a deep literature review is done on the subject studied, the past and current situation of the subject is evaluated, and suggestions for future studies can be made. The aim of this study is to examine the current status of the studies on brand reputation in the Web of Science database and to prepare the ground for future research. In this context, answers to the following questions were sought.

Question 1: What are the publication and citation trends for brand reputation?

Question 2: Who are the authors, institutions and countries that contributed the most to the studies on brand reputation?

Question 3: What are the most cited articles and journals in brand reputation studies?

Question 4: What are the keywords used in brand reputation studies?

Question 5: What are the main themes and issues in brand reputation studies?

Question 6: What are the opportunities and suggestions for future research on brand reputation? has been determined.

The answers to these questions are important because they will help both researchers and marketing managers to identify concepts related to brand reputation and to understand the role of brand reputation in these relationships. Marketing managers will be able to develop new strategies, especially on concepts related to brand reputation, and researchers will be able to benefit significantly from the results of this study in developing new research models.

The following parts of the study continue with the examination of the concept of brand reputation, the bibliometric analysis method, data analysis, findings and the conclusion and discussions part.

## 2. BRAND REPUTATION

The concept of reputation is explained as the collective perception of all businesses and consumers outside the company about the characteristics of companies or brands (Fombrun and Rindova, 2000). Another definition, is expressed as the total value and character of a brand that is generally seen and judged by people (Day and Wensley, 1988). Brand reputation is the customers' perception of the total service quality associated with the brand name (Selnes, 1998). Brand reputation is the sum of all the images that develop in the customer's mind over time and are used in the evaluation of a company (Gotsi and Wilson, 2001; Foroudi et al. 2017). Brand reputation is the combination of trustworthiness, benevolence, respect, admiration and trust regarding both current and future activities of a company or an organization (Dowling, 2001).

DelVecchio (2000) stated that brand reputation has two components: brand credibility and benevolence. Brand reliability has been defined as “the ability of an existing brand name to act intuitively to reduce consumers' perceptions of risk when evaluating a brand extension in a particular product category” (DelVecchio, 2000: 463). On the other hand, brand benevolence is impact-oriented and concerns “non-profit actions” that reflect a brand's interest in customers (Wang et al. 2014: 3). It is a type of cognitive reputation based on the functional capacity of the brand (Ohh, 2002).

Today, brand reputation has become more and more important for both academics and marketing managers. It has been stated that brands must have a positive and high reputation to earn more profits (Herbig and Milewicz, 1995). The high total value offered to the customer will positively affect on the market share and profitability of the brand and the company. For this reason, the importance given to brand reputation has increased today.

Besides satisfying consumers, the development of brand reputation also expresses the total perception of what the brand means to current and potential customers. Developing brand reputation is a phenomenon that the company and the brand gain over time (Milewicz and Herbig, 1994). Brand perception with a high brand reputation will lead customers to be more interested in these brands and shop. It also shapes consumer behavior positively and negatively. While the damage to the brand reputation during the crisis affects the consumer behavior negatively, increasing the reputation as a result of an activity or a campaign can have a positive effect on the consumer behavior. For this reason, the management of brand reputation is continuous and should be checked from time to time, and the studies should be audited.

Brand reputation acts as a shield during the crisis, protecting the company and the brand (Hess, 2008). Customers hold the firm less responsible for the crisis in times of crisis and focus more on the positive aspects of the firm, ignoring the negative information.

Brand reputation also has a powerful effect on shaping consumer behavior. Gounaris and Stathakopoulos (2004) stated that studies in the service literature support that brand reputation has a positive effect on behavioral intentions (Gounaris and Stathakopoulos, 2004). In some cases, it has been stated that brand reputation rather than overall satisfaction may have a more substantial effect on brand loyalty and purchase intention (Delgado-Ballester & Luis Munuera-Alemán, 2001). In a study, it was determined that a brand with a better brand reputation was more preferred by consumers (Belén del Río et al., 2001).

De Chernatory (1999) also stated that brand reputation is critical for companies that want to have strong brand reputation and create a sustainable competitive advantage against rival brands. Brands with a high brand reputation have advantages such as higher awareness levels, positive brand image associations, and low-risk perception (Delgado-Ballester and Luis Munuera-Alemán, 2001). Brand reputation positively affects brand loyalty, repurchase and recommendation and contributes positively to the brand’s current and future performance of the brand (De la Sabaté and de Puente, 2003).

Walsh et al. (2009) stated that an important determinant of brand reputation for a person is that person's relationship with the brand and company, and that positive relationships and reputation will increase brand performance (Walsh et.al, 2009:

191). Previous studies, have determined that a company and brand have high brand reputation when it is visible and reliable (Fombrun, 1996), and there are strong relationships between brand reputation and brand trust (Chang, 2013; Park et al., 2014).

From this point of view, it is important to reveal the concepts that will affect brand reputation and be related to this concept in an integrated way, because it is a guide to marketing managers and it is important to design research models for researchers who want to work in this field and to examine the literature to expand. In the study prepared for this purpose, the bibliometric analysis approach, which is used to help a researcher take a holistic view of the academic community in question, was used, and studies on brand reputation were examined.

## 3. BIBLIOMETRIC ANALYSIS

Bibliometric analysis is a technique that allows researcher to obtain comprehensive information about the history and development of a particular field through bibliometric indicators (Jiménez-García, et al., 2020). It is one of the effective ways to evaluate and monitor dynamic changes in research topics in a particular field of study (Ardito et al., 2019).

This methodology is important as it provides a categorized view of the documents published in each research field based on objective criteria for analyzing and classifying publications (Cavalcante, et al., 2021).

In bibliometric analysis, the literature is reviewed systematically and empirically using scientific mapping techniques (Andersen, 2019). VOSviewer software is a valid bibliometric method as a visual mapping tool in bibliometric analysis (Eck and Waltman, 2010). VOSviewer software provides the opportunity to present data graphically via category maps (Cavalcante, et al., 2021).

To improve the bibliometric analysis of the literature, it is necessary to select the indicators to be used in the study (Ding et al., 2014). Various text analysis indicators such as author analysis, citation analysis, journal analysis, geographical analysis, analysis of publications by the organization, keyword analysis, abstract analysis are used in the bibliometric analysis.

Paul and Rialp (2020), in their literature review using bibliometric analyses, found that there are three approaches: domain-based (the synthesis of content into themes), theory-based (generalizations about studies that apply the same theory), and method-based (generalizations about studies that share a common methodology). stated. In this study, a field-based approach was adopted, which is used to summarize the content of the literature (main themes) and explore future research gaps (Goyal and Kumar, 2021; Paul and Benito, 2018).

One of the leading indicators of scientific productivity is the studies performed in national or international journals and indexed in international databases such as Web of Science (WoS) and the number of citations to these studies. In this study, a systematic bibliometric analysis was made from the Web of Science (WoS) database for the concept of brand reputation. Choosing the Web of Science database is that the VOSviewer program provides the opportunity to analyze the files that can be downloaded from this database, and the database contains high-quality publications such as SSCI, SCI-Expanded, ESCI.

Bibliographic records for the period 1991-2021 were downloaded based on the word brand reputation in the title of each article. Data download was performed on 7 January 2022. In this way, a total of 77 articles were obtained. These were then exported as plain text and sent to a bibliometric analysis software called VOSviewer. The following categories were selected to filter the results. Document types—article, proceeding paper, early access, and review; directories—SCI-Expanded, SSCI, and ESCI. Research areas were Business (41 publications) Management (16), Computer Information Systems (7), Economics (7), Communication (5).

## 4. DATA ANALYSIS AND FINDINGS

The study performed the following analyzes: author analysis (based on authors' publications), citation analysis (based on citation network by authors), journal analysis (based on journal productivity and publication volume per journal), geographic analysis (based on the/a number of co-authored publications by country), by organization analysis of publications, keyword analysis, abstract analysis.

### 4.1. Publications by Year and Category

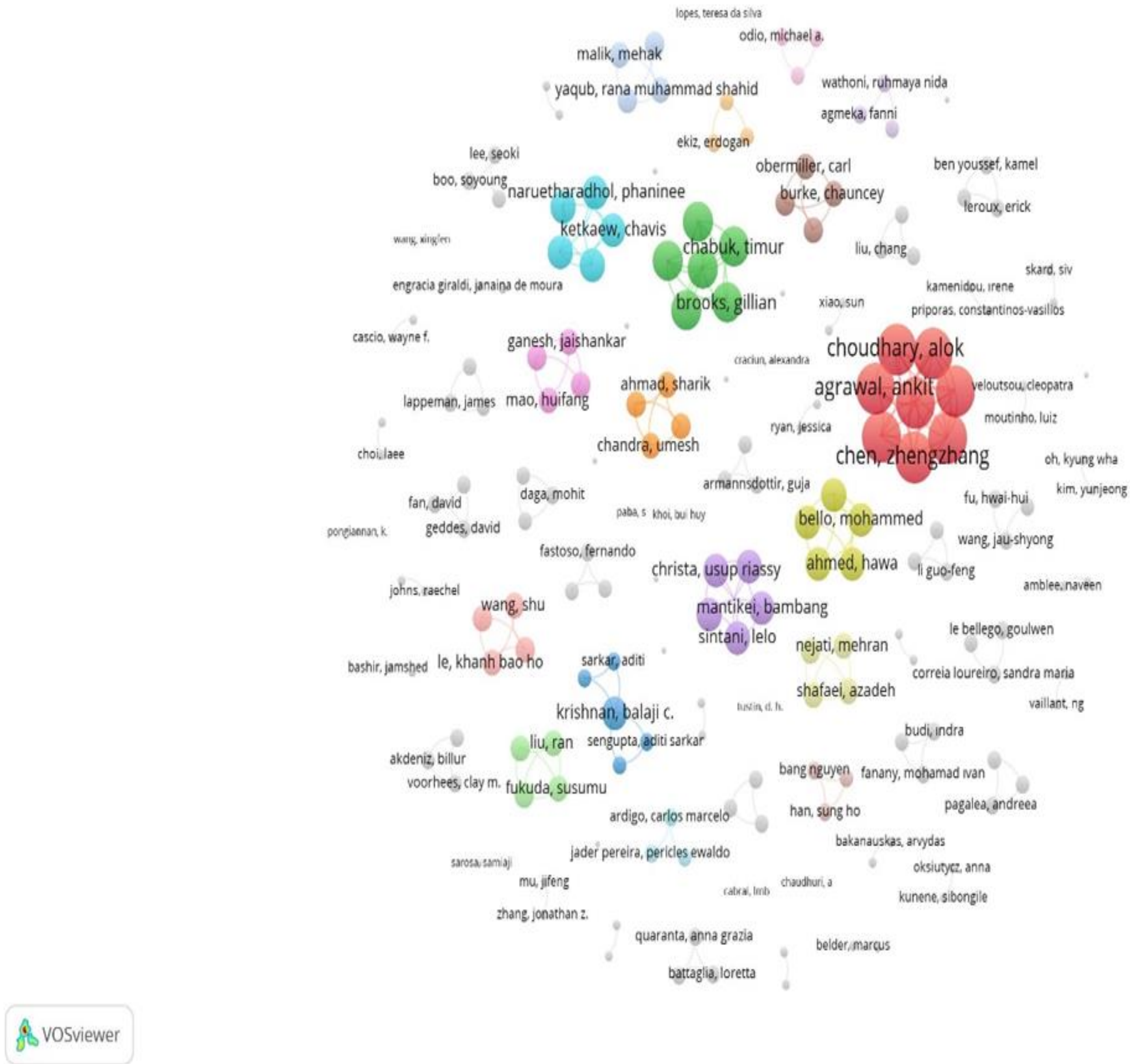
The first study dealing with the brand reputation theme was published in Paba'a proceeding paper-in 1991 (Paba, 1991). The study title was "Brand Reputation, Efficiency and The Concentration Process- A Case Study". Afterwards, another study was published in 2000, 2002, 2006, 2007. 2 studies were published in 2008 and 5 studies in 2009. After 2009, the interest in the subject increased and 2014, 2018 and 2021 were the years with the most studies. After 2018, the number of studies increased.

When evaluated in terms of the/a research area, it was determined that the majority of 77 studies, the majority of which were distributed as Business 41, Management 16, Economics 7, Computer Science Information Systems 7, Communication 5, consisted of studies from these fields.

### 4.2. Author Analysis

The authors' analysis relates to the author's number of publications and involvement in the collaboration. The authors with the most (2) studies in brand reputation are Balaji and Krishnan. This result shows that all authors except Balaji and Krishnan were authors in only 1 study. It was determined that each of the other authors had 1 study in the field of brand reputation. Considering the clustering of the studies according to the number of authors, it is shown in red that the study with the most authors consisted of 8 authors.

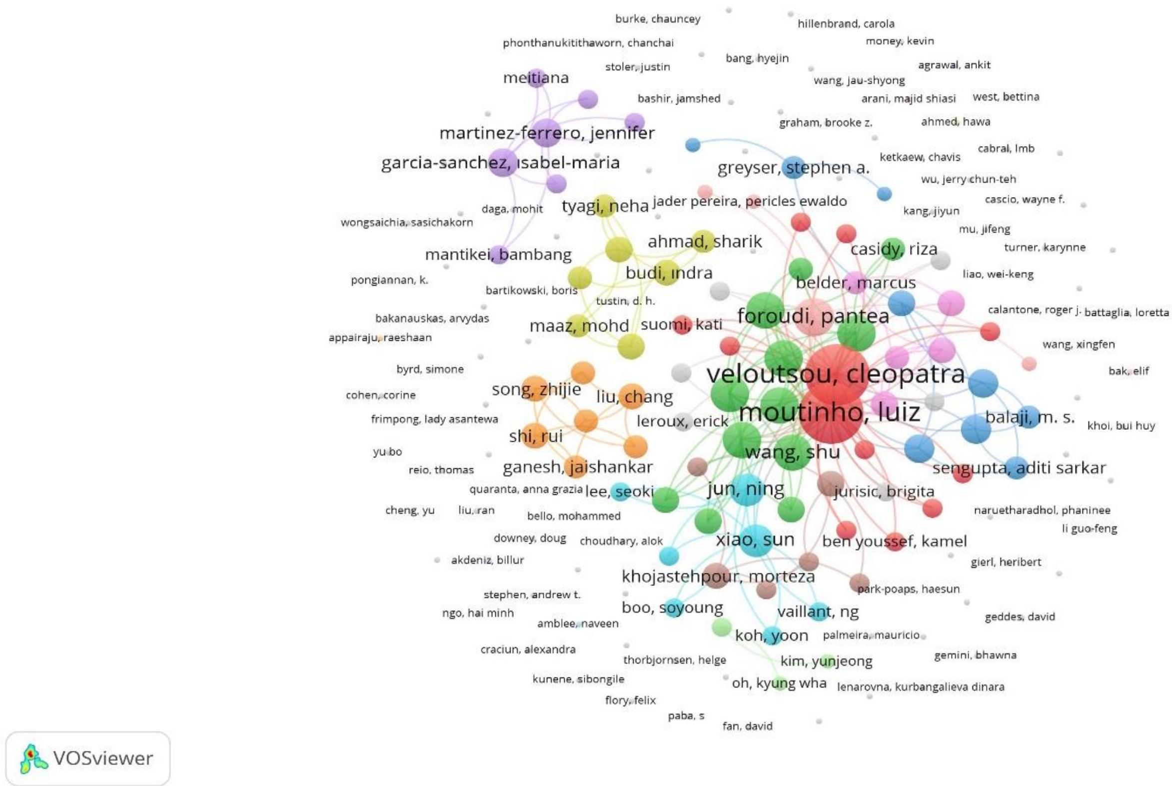
**Figure 1: Co-Authorships of Brand Reputation Research in WoS (Web of Sciences)**




### 4.3. Citation Analysis

Citation analysis is important as it determines the research area's main studies. Figure 2 shows the most cited studies in the field of brand reputation. It is seen that the work of Veloutsou and Moutinho (2009) has the highest number of citations (210 citations). The density of the citation numbers of other authors according to the circle size and colour is also seen.

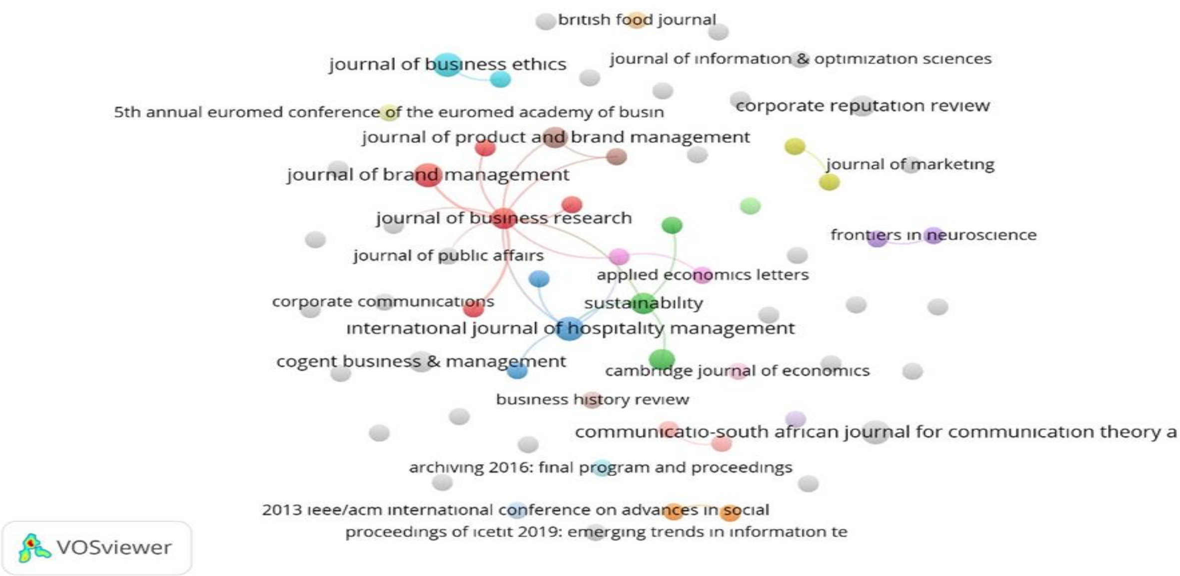
**Figure 2: Top Cited Authors on Brand Reputation Research**




## 4.4. Journal Analysis

Between the years 1991-2021, a total of 77 studies with a brand reputation theme in the title were published. These publications consist of 56 articles, 23 proceeding papers, 2 review articles, 1 book chapter and 1 early access study. Developments in Marketing Science, International Journal of Hospitality Management, Journal of Brand Management, Journal of Business Ethics, Procedia Computer Science and Communication South African Journal for Communication Theory and Research are in the first place, with three publications each.

**Figure 3: Leading Journals for Brand Reputation Research**

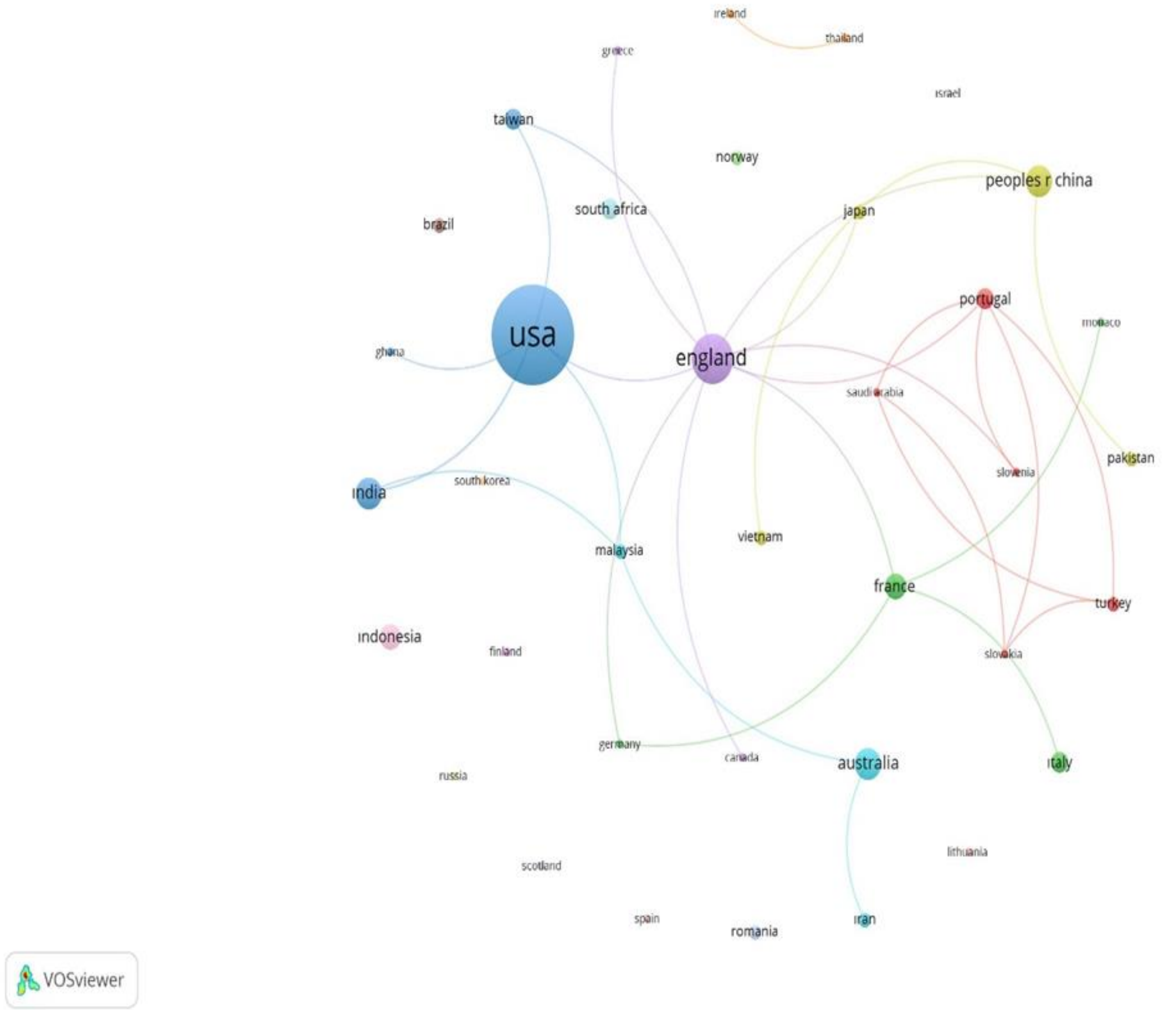



### 4.5. Country Analysis

Based on published articles, the country of origin of the authors indicates that this research topic is widespread worldwide as 37 different countries are represented. When examining the form created to determine the countries in which the authors are included, it is seen that the prominent countries are USA (21), England (9), Australia (5), India (5), China (5).

Looking at the lines expressing cooperation and partnership between countries, it is possible to realize that the United States of America and England are located in the centre of the map because they are three poles with many connections with other countries.

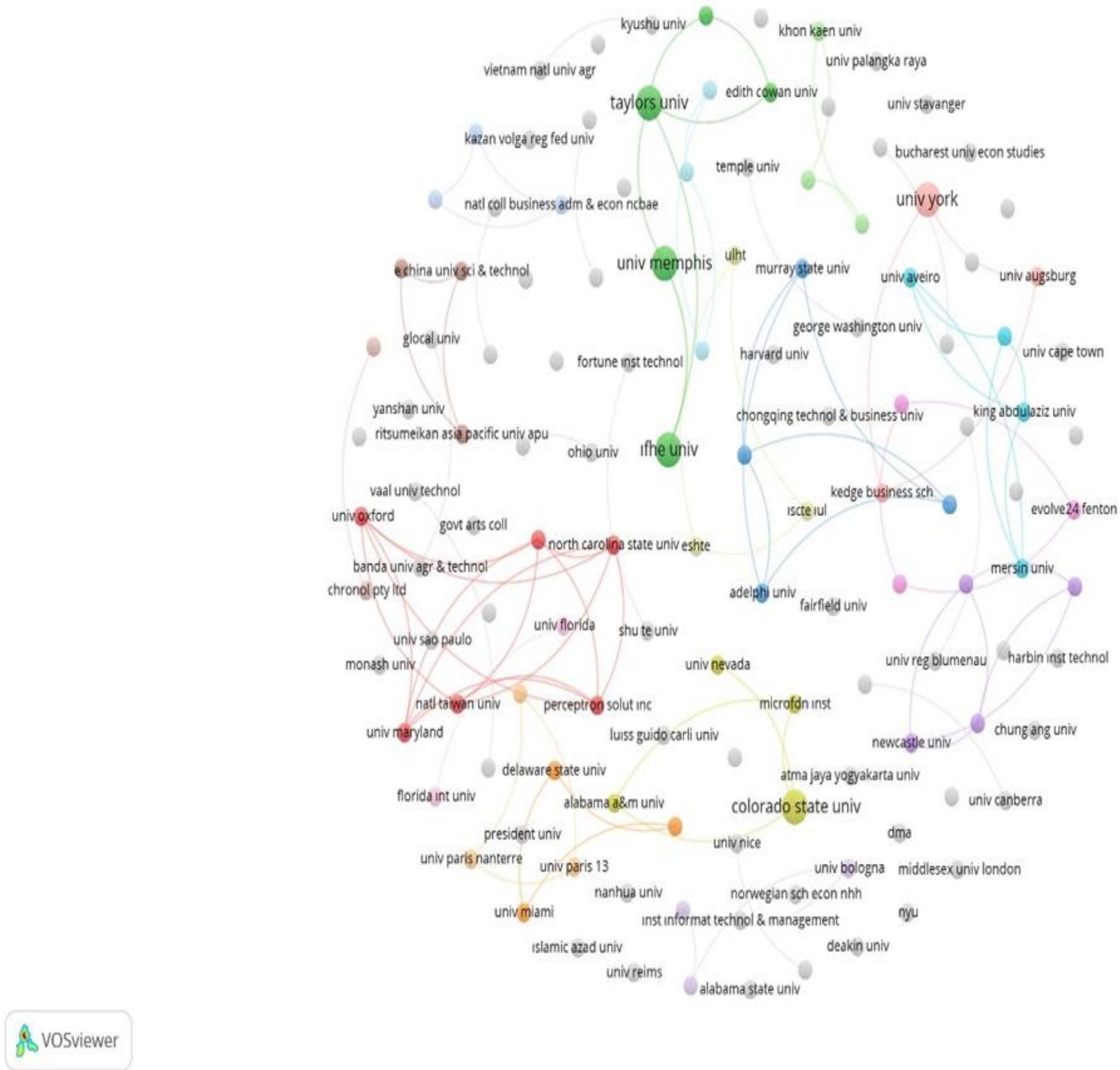
**Figure 4: Top Contributing Countries in Brand Reputation Research**




## 4.6. Analysis of Publications by Affiliations

Figure 5 presents the universities with the most publications in brand reputation. Universities, where two studies were conducted with the same number, are Colorado State, Taylors, Memphis, Ifhe and York universities. It is noteworthy that 4 of these top 5 universities are in the United States and 1 in India. When the cooperation between universities is examined, these Taylor, Memphis and Ifhe universities, which have large knots in shape, stand out, and other similarly coloured knots, show that studies were conducted with authors from those universities.

**Figure 5: Publication Volume and Relevance of Affiliations**



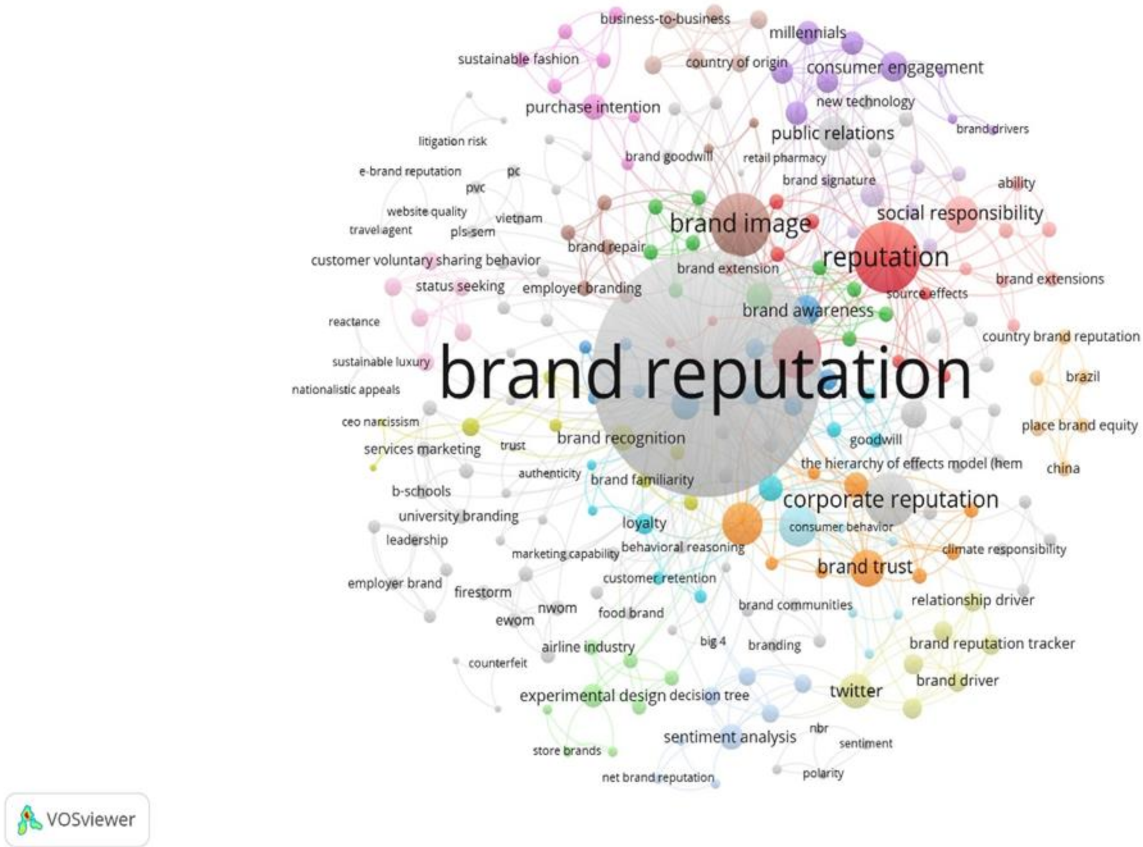

### 4.7.

### 4.8. Keywords Analysis

Analysis of keywords helps us know the research area and the most repeated topics. It indicates which concepts are associated with the subject in the research area, which are the most and which are the least, and it guides future research.

Figure 6 shows the keyword analysis results. When the size of the nodes is examined, it is seen that the concept of brand reputation is studied more with concepts such as reputation, corporate reputation, brand image, brand trust, brand equity, social responsibility, consumer behavior, brand awareness, brand loyalty, Twitter, brand recognition, public relations, consumer engagement. In terms of statistical techniques, it is seen that analyzes such as experimental design and sentiment analysis are mostly used among medium-sized nodes. Suppose we pay attention to the connections with smaller nodes and similar colors. In that case we can see that brand reputation with the concepts of place brand equity, country brand reputation, reputation, social responsibility and brand extensions, brand image, country of origin and B2B concepts, public relations, consumer engagement. It is seen that it is considered together with concepts such as new technology and millennials. Apart from these connections, it is seen that it is tried to be associated with different concepts with much less node size and connection number.

**Figure 6: Keywords Associated with Brand Reputation in WoS**

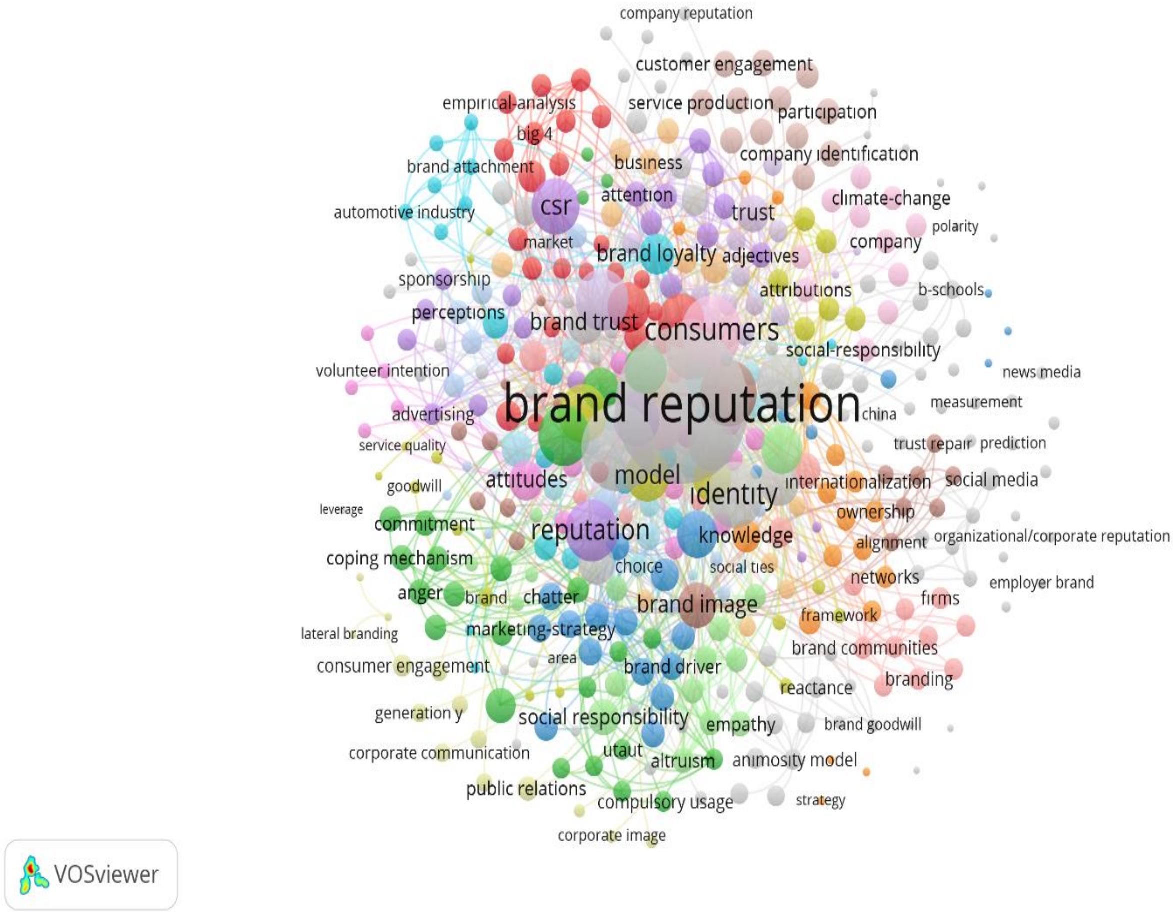



## 4.9. Abstract Analysis

The last analysis that the study deals with is the abstract analysis. The/an Abstract analysis is similar to keyword analysis, but it provides the opportunity to analyze more words in scope and examine the study content. Depending on the concepts in the abstract, it gives information such as the direction of the current studies, which concepts are examined much more, which concepts are used very little, as in keyword analysis. Figure 7 contains the abstract analysis.

When the nodes in the figure are examined according to their size, it is seen that concepts such as brand reputation, reputation, corporate social responsibility, identity, attitudes, brand image, consumers come to the fore. This result shows that these concepts are more associated with brand reputation as expressed in keyword analysis. Apart from this, similarly colored clusters show the working clusters related to brand reputation by which concepts are considered together for each studied study.

**Figure 7: Strategic Concepts Related to Brand Reputation According to Abstracts**




## 5. CONCLUSION AND DISCUSSION

In this study, a comprehensive review of the studies in the Web of Science database on brand reputation was made, analysis of the author, citation, journal, country, institution, keyword and abstract was carried out.

This study helps to understand the current state of brand reputation studies and is essential for exploring research gaps and identifying future trends in this field. At the same time, the volume of publications determines the journals that publish more in their field, and the central countries and institutions. These findings guide which studies will be based on in future research, how they will be used for collaboration and the determination of relevant variables in the research model design process. It can serve as a starting point for future research by presenting what has already been studied and new relationships that can eventually be explored. The study findings are limited to 77 studies on brand reputation listed under the Web of Science database.

As seen in the results, it has been observed that the studies on brand reputation have increased periodically and the number of publications has increased with the increasing momentum in the last period. The reason for this is that reputation research has come to the fore periodically in response to a crisis or a situation. Recently with the increasing importance of the concept of brand reputation, the number of studies in this field has increased. The results obtained in this bibliometric analysis show the increasing interest in brand reputation in brand management.

It has been observed that studies on brand reputation have been examined by authors from many countries such as 37 countries. The few or no studies on brand reputation in other countries create a/the field for new studies. Other than these countries studies on brand reputation will contribute to the international literature. It may be that researchers from countries such as the USA conduct more studies on reputation, the importance of the concept of reputation is understood in this country, and there are many negative situations related to brand reputation periodically. When the variables handled in the keywords and abstract analysis regarding brand reputation are examined, in the keyword analysis reputation, corporate reputation, brand image, brand trust, brand equity, social responsibility, consumer behavior, brand awareness, brand loyalty, Twitter, brand recognition, public relations, Concepts such as consumer engagement and reputation, corporate social responsibility, identity, attitudes, brand image, and consumers stand out in the abstract analysis. It can be said that brands with high brand trust, equivalence, loyalty, awareness and social responsibility perception can create more brand reputation. In addition, it can be stated that attitudes will be formed depending on the perception of brand reputation, and these will affect behavioral intentions. Apart from these concepts, it can be said that the concepts that occur less in nodes and form clusters in similar color groups can be variables that can be considered for future research. In addition to the more frequently associated variables, new studies can be conducted that deal with these less often discussed concepts together. In terms of application, it has been seen that brand reputation is examined in universities and cities. Similarly, it has been determined that it has emerged recently in studies on social media and that brand reputation studies are mostly examined on Twitter. Since it is a new research area, studies in these areas can be increased. Although the number of studies examining the relationship of corporate social responsibility projects with brand reputation is high in the current situation, it can be recommended to examine again and by adding different variables during the Covid 19 pandemic period, with its increasing importance in terms of today. In terms of statistical techniques, the concept of the model comes to the fore as determined in the abstract analysis of the studies to examine research models. It shows that different techniques such as experimental design and sentiment analysis can be evaluated.

In the study, it was determined that in terms of consumer behavior, variables such as purchasing and word of mouth communication on the Internet were handled less frequently. It is thought that with the transformation of communication over social media into dialogue and word of mouth communication gaining importance, the studies that can be done in this field will contribute significantly to the reputation management process through social media and will guide in times of crisis.

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# EFFECT OF THREE INNOVATION COMPONENTS IN BUSINESSES ON SOCIAL INNOVATION

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## ABSTRACT

**Purpose-** The aim of this study is to provide a theoretical understanding of transformational leadership, dynamic capabilities and business model innovation processes that may be necessary for strategic management in enterprises, and to investigate the interaction of these factors and their effects on social innovation as a tool. In this context, the effects of dynamic capabilities and the contributions of transformational leadership in business model innovation processes were tried to be determined, the effect of intra-organizational dynamics on innovation and how the mentioned three innovation components shape social innovation were investigated.
**Methodology-** Quantitative research method was used in the research and survey forms were used within the scope of the study. 198 employees working in SMEs in Istanbul were used as sample. In order to test construct validity of the study; factor analysis, correlation analysis were used to measure the severity and direction of the relationship between the variables and regression analysis was used to measure causality between variables.
**Findings-** The transformational leadership variable does not explain the social innovation variable. The Business Model Innovation variable explains the social innovation variable by 8%. The Business Model Innovation variable explains the transformational leadership variable by 10%. Dynamic Capabilities variable explains social innovation variable by 10%. Although the Dynamic Capabilities variable explains the transformational leadership variable at a rate of 17%, its contribution was found to be weakly positive.
**Conclusion-** Social innovation cannot be carried out only by social entrepreneurs, non-governmental organizations and the state. Businesses enable their employees to change their perspectives on life and integrate them with society. Therefore, individuals within the organization can be socially innovative as well as benefit directly or indirectly from social innovation. Based on this phenomenon, it is known that business model innovation, transformational leadership and dynamic abilities are meaningful among themselves in the business literature. This significance has been tested in social innovation in business organizations.

**Keywords:** Transformational leadership, business model innovation, dynamic capabilities, social innovation, strategic management.
**JEL Codes:** 030, M10, M54

## 1. INTRODUCTION

With the effect of increasing global competition and sustainability concerns in recent years, being beneficial to the society and corporate social responsibility have started to gain importance in profit-oriented businesses. In the face of social problems and needs such as poverty, unemployment, female workforce, child employment, education, migration, natural disasters, disability, health problems, social innovation attracts more and more attention of businesses to use as an element of strategic management. The production of new products and services focused on solving social problems with an innovative perspective has an important role in increasing the quality of society.

In order to realize social innovation, various components and activities are needed within the organization. In the organizational context, a culture of innovation should be created within the institution with managerial strategies and visionary approaches such as using, transforming and disseminating information, institutionalizing, creating institutional memory, and transferring. Employees can learn innovation with many technical applications such as correcting mistakes, eliminating deficiencies, making quick decisions, fast communication, effective learning, effective teaching, making comparisons, prohibiting, warning and controlling. As can be seen here, the fact that it has too many functions such as increasing and diversifying communication at both individual and unit level, being audio-visual, directing time beyond time management with smart applications, also indicates how difficult it is to follow and control. In this respect, formation of innovation is very important to understand the effect of transformational leadership in the organization. The resource-based approach enables employees to learn while doing work and to increase their dominance in the work they learn. This process empowers the employee. In this way, the dynamic abilities of the employee increase. As a result, the employee discovers new ways related to his job. The relative degree of innovation, the influence and direction of leaders is related to the proximity of the business model to the market. In this context, it is thought that three innovation components (transformational leadership, dynamic abilities, business model innovation) in businesses have a positive effect on social innovation.

In this paper, with the aim of providing a theoretical understanding of transformational leadership, dynamic capabilities and business model innovation processes that may be necessary for strategic management in enterprises, the interaction of these factors and their effects on social innovation as a tool will be investigated. Firstly, relevant literature will be searched and hypotheses will be determined. The effects of dynamic capabilities and the contributions of transformational leadership in business model innovation processes will be tried to be determined, the effect of intra-organizational dynamics on innovation and how the mentioned three innovation components shape social innovation will be investigated. Then quantitative research method will be used for analysis and findings will be discussed.

## 2. LITERATURE REVIEW

Social innovation is different from business innovations realized by organizations motivated by the priority of profit maximization and it is defined as “innovative activities and services that are motivated by the goal of meeting a social need and developed and disseminated through organizations whose primary purpose is predominantly social” (Mulgan et al., 2007: 8). There are seven currents of literature on social innovation with different perspectives: sociological perspective, creativity research perspective, entrepreneurship perspective, welfare economics perspective, practice-based perspective, community psychology perspective, and regional development perspective (Choi and Majumdar, 2014: 9). These perspectives are summarized in the table below.

**Table 1: 7 Perspectives of Social Innovation**

| Field | Author | Perspective |
|---|---|---|
| Sociology | Zapf (1991); Gillwald (2000); Heiskala (2007); Kesselring & Leitner (2008); Howaldt and Schwarz (2010) | It has been investigated with regard to its significance in changing social practices and structures and leading therefore to social evolution and social change. |
| Creativity research | Mumford (2002); Mumford and Moertl, (2003) | It investigates strategies and tactics that are used to generate and implement social innovations, the factors that influence the development of ideas for social innovations, and the social settings which lead to the acceptance and diffusion of these ideas. |
| Entrepreneurship | Swedberg (2009); Ziegler (2010) | It is addressed by the social innovation school of social entrepreneurship. Since the social innovation school builds heavily on Schumpeter’s theory of entrepreneurship, it views social entrepreneurship and social innovation as closely related concepts. |
| Welfare economics | Pol and Ville (2009) | It has the potential to improve either the quality or the quantity of life. Quality of life includes aspects such as material well-being, education opportunities, health domain, job security, family life, community life, environment (climate and geography), political freedom and security, and gender equality. |
| Practice-led field | Mulgan (2007); Phills et al. (2008); Murray et al. (2010); Caulier-Grice et al. (2012) | This stream of literature is more interested in the practical applications of social innovation rather than in building theories on the topic. Hence, literature of this type often attempts to offer strategies and road maps for creating social innovations, rather than explaining social innovation within a theoretical context. |
| Community psychology | Fairweather (1967) | The goal of community psychology is to bring social change to communities and to improve the quality of life of the members through the introduction and dissemination of innovative solutions, i.e. social innovations. |
| Territorial development | Moulaert et al. (2005) | The social rationale of these social innovations is the inclusion of excluded groups into spheres of society such as the labour market, the education system, and socio-cultural life. |

Source: Choi and Majumdar, 2014: 9-25.

Three levels of social innovation can be identified. First, there are increasing innovations in goods and services to address social need more effectively or efficiently. This is the goal of many successful charities and nonprofit organizations. From this perspective, social innovation can be a good business opportunity. Second, there is institutional innovation, which aims to reorganize existing social and economic structures to create new social value and results. This level of social innovation is often driven by experts who reposition new technology or intellectual capital for social rather than purely economic purposes. However, while the focus is social, this type of innovation should not be separated from economic issues: corporate social innovation is often a response to problematic patterns of economic exchange between sectors or societies. Finally, disruptive social innovation directly targets system change from the start. This is the domain of social movements and "political" actors, groups and networks that seek to change power relations, alter social hierarchies and reframe problems for the benefit of disenfranchised groups (Prahalad, 2005; Hamalainen and Heiskala, 2007; Hall, 1992, 1993 cited in Nicholls and Murdock, 2012: 4-5). There are three highly talented managerial premises in social innovation: Integrating Corporate Social Responsibility into business strategy with a strong commitment from top management; separating activities related to the development of social innovations from the rest of the organization, following the structural sophistication model; to apply the principles of open innovation to the development of social innovations by including non-profit organizations as a source of ideas for new social innovation projects and utilizing them to ensure the adoption of new products and services (Altuna et al., 2015: 271-272).

Organizations and effective leaders who feel responsible for society and future generations should simultaneously focus on current activities, emerging and more radical possibilities that may be the main activities of the future (Mulgan et al., 2007: 16-17). Westley et al. (2014) pointed out that leadership plays a key role in the success of social innovations (Milley and Szijarto, 2020: 4). At this point, transformational leadership comes to the fore.

Transformational leadership occurs when leaders increase subordinates' interest, create awareness and acceptance of the group's goals and mission, and mobilize subordinates to put the group's interests above their own. Transformational leaders can achieve these results in several ways: they can be charismatic and inspire their followers; they can meet the emotional needs of each subordinate and provide intellectual stimulation to subordinates (Bass, 1990: 21). The transactional leader is extrinsically motivated and works with the rules of the organizational culture, while the transformational leader is intrinsically motivated and redefines or changes the organizational culture on the basis of his or her vision for a more satisfying future status (Avolio and Bass, 1995: 203). Transformational leadership has four dimensions: charisma, inspiration, intellectual stimulation, and individualized consideration. Having charisma in the eyes of subordinates is essential to the success of the transformational leader. Charismatic leaders have great power and influence. His subordinates want to identify with him and have a high degree of trust in him. Charismatic leaders inspire and excite their subordinates with the thought that it is possible to achieve great things with extra effort (Bass, 1990: 21). A leader inspires by motivating his followers and shows them with his own actions. It creates team spirit and creates goals for the future, an attractive and shared vision with the audience, adopts the audience and sets an example by showing strict adherence to them (Erkuş and Günlü, 2008: 191). Intellectually stimulating leaders can show their subordinates new perspectives on old problems, teach them to see difficulties to solve problems, and emphasize logical solutions (Bass, 1990: 21). Individualized attention is like a support force that provides positive or negative feedback support to the audience who are expected to complete their tasks by learning from their successes and mistakes (Avolio and Bass, 1995: 202). Transformational leaders pay close attention to the differences among their subordinates and act as consultants to those who need help to grow and enhance (Bass, 1990: 21).

Organizations need to be more flexible, adaptable, enterprising and innovative to meet the changing demands of today's environment. In order to realize this change, it is important to choose the appropriate leadership style (Sarros et al., 2008: 145). It has been argued that transformational leadership, unlike transactional leadership, is particularly effective in enabling the follower's innovative behaviors (Pieterse et al., 2009: 609). Positive relationships were found between transformational leadership behaviors and organizational innovation (García-Morales et al., 2008: 188; Hsiao & Chang, 2011: 621; Khalili, 2016: 2277; Junga et al., 2003: 525; Reuvers et al., 2008: 227; Imran et al., 2009: 678). It has been determined that transformational leaders can foster an innovation environment that encourages creativity of employees, act as a lever to facilitate innovations of R&D teams (Jaiswal and Dhar, 2015: 30), in addition to generating ideas, it positively affects innovative work behavior including idea application (Afsar et al., 2014: 1275); support innovation in business units (Howell and Avolio, 1993: 891), and have a positive effect on the implementation of large-scale innovation programs (Geijsel et al., 1999: 309). It has been determined that CEO transformational leadership has a direct positive effect on organizational innovation (Zuraik and Kelly, 2018: 1460). In this context, it is thought that transformational leadership, which is a type of leadership focused on change and innovation, will positively affect social innovation.

H1: Transformational Leadership tendencies affect social innovation tendencies positively and significantly.

Another variable that is important for realizing social innovation is dynamic capabilities. Vezina et al. (2019: 1399) found that the management of dynamic capabilities is central to social innovation and provides a real management input through the analysis of the micro-processes at work in the social innovation process. The field of “dynamic capability” has developed very rapidly in the last decade. This field is closely related to the resource-based view, which is a very active area of research. Like the resource-based view, the focus is on key issues such as competencies and company performance that are important in strategic management. It is similarly relevant to strategic renewal, adaptation and growth. However, unlike the resource-based view, the emphasis is on dynamics. It includes talent lifecycles and temporal dynamics, as well as the lifecycles and evolutionary paths of firms and industries. It links innovation and organizational learning as it deals with the mechanisms of change, which in turn links it to knowledge management and provides a knowledge-based perspective. Mechanisms also refer to processes, a broad topic of fundamental importance in both management research and practice. To date, progress has been made by bringing together and recombining different theoretical and scientific traditions. This has contributed to the wealth of research on dynamic capabilities, but has generated some controversy. Despite widespread use of the dynamic capacity structure, a universally accepted definition has been slow to emerge. This may be partly because the definition provided by Teece, Pisano, and Shuen (1997) is broad enough to provide opportunities for others to reinterpret and expand the concept (Easterby et al., 2009: 1-2). Table 2 contains definitions expressing dynamic capabilities.

**Table 2: Definitions of Dynamic Capabilities**

| | |
|---|---|
| Teece, Pisano and Shuen (1997) | It refers to the ability to restructure, organize and integrate internal and external competencies in rapidly changing environments. |
| Eisenhardt and Martin (2000) | They are the organizational and strategic routines through which firms acquire new resource configurations as markets emerge, collide, divide, evolve and die. |
| Zollo and Winter (2002) | They are learned, determined collective activities to change operational processes and improve activities. |
| Nielsen (2006) | They compete in their ability to innovate and develop, as well as their ability to use existing resources and capabilities. |
| Ambrosini and Bowman (2009); Festing and Eidems (2011) | Firms restructure their resources and competencies to take advantage of environmental opportunities and make dynamic adjustments between their internal functions and the external environment. |
| Pavlou and El Sawy (2011) | It is a set of capabilities that helps to reconfigure existing operational capabilities to adapt to the environment. |
| Helfat and Peteraf (2003) | It is the ability to use and benefit from coordinated abilities at the organizational level to result in tangible and intangible production inputs. |
| Ju et al. (2016) | They are the institutional and strategic routines that organizations achieve when entering markets, exploring markets, competing in the market, deciding to leave the market, when they exit the market, when they develop the market, when they reach the end of their market life cycle, to combine new resources. |

Sources: Easterby et al., 2009: 2; Eisenhardt and Martin, 2000: 1107; Zheng et al., 2011: 1036-1037; Nieves et al., 2016: 159; Piening and Salge 2015: 82; Ju et al., 2016: 7.

The characteristics of dynamic abilities are as follows (David, 2017: 43-44; Pavlou and El Sawy, 2011 cited by Nieves et al., 2016:159-160; Eisenhardt and Martin, 2000 cited by Zheng et al., 2011:1036- 1037; Fallon-Byrne and Harney, 2017: 22-24):

1. It includes the detection, capture, and transformation required to design and implement a business model.
2. It requires developing and coordinating its resources.
3. It expresses self-development, an endless cycle of expansion.
4. Performance result is uncertain.
5. They are processes that can work both in dynamic environments and in environments that do not undergo rapid change.
6. Learning mechanisms are their driving force.
7. Restructures resources and capabilities within and outside the organization, so that firms can take advantage of environmental opportunities.
8. It is expressed as perceiving the ability to identify, interpret and follow opportunities in the environment.
9. It is expressed as learning the ability to renew skills with new information.
10. It is expressed as coordinating the ability to organize and implement tasks, resources and activities.
11. It can be distinguished from operational or collaborative capabilities by their relationship to change.
12. It provides the opportunity to search for new opportunities and to anticipate the threats of competitors.

13. It enables companies to create, assimilate and integrate knowledge simultaneously and continuously to maintain continuous levels of innovation.
14. The ability to implement process innovations qualifies as a dynamic capability because process innovations represent changes in the way things are done in the firm.

The emergence of dynamic capabilities theory can be seen as the conceptualization of key elements of organizational change such as innovation, organizational learning, and knowledge management. Dynamic capabilities exist to “reconstruct” and “renew” existing resources and “create” new ones (Dixon et al., 2014; Wang et al., 2015). Changes in the way routines are done in the organization can be characterized as a dynamic capability as it is applied as a process innovation. Dynamic capabilities theory emphasizes the importance of activities aimed at producing, acquiring, integrating and disseminating knowledge in order to ensure that processes can be restructured within the organization (Fallon-Byrne and Harney, 2017: 22).

Dynamic capabilities can be viewed as a preparation for organizational change that facilitates firms' business model innovation. Firms need to have mechanisms to perceive the need for business model innovation. They can develop dynamic capabilities that enable them to systematically innovate their business models. Dynamic capabilities help the firm create and capture value by encompassing activities, processes and leadership skills where the need to change/innovate existing business models is recognized and the necessary assets are accessed and organized in the pursuit of new value creation. In the implementation of the new business model, unpredictable internal and external changes can be responded with agility and flexibility (Leih, Linden and Teece as cited in Foss and Saebi, 2015: 11). This requires dynamic capabilities.

The direct relationship between dynamic capabilities and a firm's value creation and competitive advantage addresses the capacity of dynamic capabilities to detect and shape opportunities and threats, capture and improve opportunities, consolidate, protect and maintain competitiveness through restructuring as necessary. The capacity of an organization to change its business model underlies dynamic capabilities, and researchers have alternately implied their capacity to create, integrate, and restructure dynamic capabilities (Weerawardena and Felix, 2011: 1221-1222). In this context, it has been revealed that innovation (management innovation) encourages the development of dynamic capabilities, there is a strong overlap between dynamic capabilities and innovation (management innovation), and these capabilities are changed (Heiko, 2011: 1238-1249). In this regard, it is important to understand dynamic capabilities and business model innovation.

In parallel with the definition of dynamic capabilities to perceive, capture and restructure opportunities; social innovation can be redefined as the capacity to detect opportunities and threats, seize those opportunities, and restructure both internal and external resources, as well as operational capabilities to meet societal needs on a non-profit basis (Claver-Cort´es, Marco-Lajara, Manresa-Marhuenda & García-Lillo, 2018; Vézina et al., 2019 cited in Tabaklar et al., 2021: 147-148). In other words, dynamic capabilities can be thought of as stages in the social innovation process. Perception refers to the ability to identify a societal demand for social transformation. Capturing talent is about turning societal demand into a commercial offering. Restructuring is about institutional innovation to integrate real and new knowledge through innovative routines (Vézina et al., 2019: 1399). The Table 3 shows the integration of the stages of dynamic capabilities into the innovation process with social skills.

**Table 3: A Three Stages Model of The Social İnnovation Process**

| Stage | Dynamic Capability | Expression of social innovation capability | Dominant organising processes | Expression of social innovation capability |
|---|---|---|---|---|
| 1 | Sensing: capability to identify an opportunity | Social transformation: capability to identify a societal demand for social transformation | Governance and mission-led Bottom-up and deliberative | What is the social dimension of the mission? What is the social demand that is not satisfied? What are the possible social transformation projects? |
| 2 | Seizing: capability to seize the opportunity | Social innovation: capability to shape societal demand into a new product/service | Decentralised process of boundary product definition Corporate-business unit ongoing dialogue | How can the social demand be satisfied by our operations? What social innovation is needed to meet this social demand? |
| 3 | Reconfiguring: capability to reconfigure resources | Organising innovation: capability to integrate actual and new knowledge through innovative routines | Operational cospecialization connecting mecanisms Mission committed culture and employees | How can this social innovation be fostered by our (tangible and intangible) resources? What new knowledge is needed? What organisational innovation would allow new knowledge to be integrated, consistently with the enterprise’s mission? |

Source: Vézina vd., 2019: 1409.

H2: Dynamic capabilities trends positively and significantly affect social innovation trends.

In terms of business models, linking social needs directly with economic activities is an innovation, and thus the use of economic activities to approach social needs represents a social innovation of traditional (economic) entrepreneurial activities. In a learning society, business and the nonprofit sector are in a mutual learning process. Each has a significant impact on the other, and both go through a process of social innovation based on new business models, as in community-related business models or social enterprises (Lisetchi and Brancu, 2014: 90-91). There may be potential conflicts between opportunities determined according to different social, economic and environmental logics, but these can be managed by designing innovative business models (Nicholls and Murdock, 2012: 23).

Because business model innovation is a complex process where action and cognition are intertwined, it is not a two-stage understanding and execution process, but a multi-stage, multi-mechanical learning process that can occur with drifting and jumping patterns. It is necessary to take into account which business model will be most effective and how an effective learning process will be carried out to reach a new business model (Berends et al., 2016: 200). Focusing on the business model to achieve sustainable development offers opportunities for more comprehensive, long-term and radical solutions because changing the business model can have implications for all the activities, processes and resources with which a company creates, delivers, captures and exchanges value (Teece, 2010 as cited in Baldassarre et al., 2017: 176). Within the scope of dynamic capabilities, it is very important to understand the contribution of organizational innovation and organizational learning to business model innovation as tools, the contributions and interactions of the transformational leadership style that may be required for intra-organizational leadership and political maneuvers. According to Chesbrough (2010: 400), if a leader with significant decision-making power is committed to business model experimentation, the chances of success increase significantly. However, if they hinder business model redesigns or innovations, it will be nearly impossible for other managers to experiment, create learning processes, or effectively implement a new business model.

The design and operation of business models will change according to the capabilities of the firm. The preparation, development, implementation, transformation of the business model creates the outputs of dynamic capabilities. Supporting dynamic capabilities with organizational routines and management skills so that they can be used within the firm, is includes integrating, restructuring and building. The strength of dynamic capabilities is critical to sustainability capability, including the design phase of the business model, down to long-term profitability. There is a layer of dynamic capabilities that can be broken down into micro-foundations (meaning the tuning, recombination and development of mundane capabilities) and higher-level capabilities, which are above routine operations and management. These are second-order dynamic capabilities that include new product development, expansion into new sales territories, assignment of product authorizations between divisions of large companies, and other actions that constitute intelligent managerial decision-making under uncertainty. These top-level capabilities are applications that include restructuring to meet the needs of the future, ensuring that structures work in the best way, developing business models to capture changing opportunities, and new plans for the future (David, 2017: 40-41).

When the business model as a whole is evaluated, it is still complex how to pre-assess the sustainable impacts of innovations to be made in the business model and their impact on the business model. Developing innovations is a fundamental approach, as innovations drive sustainability and describe the way the organization creates value. However, there is no general agreement on the concept of "business model". While American academics focus on business model classification and open innovation policies, European academics focus on modeling and design approaches (Evans et al., 2017:2). Table 3 includes business model definitions.

**Table 4: Definitions of Business Model**

| | |
|---|---|
| Teece (2010) | It is the restructuring of business capabilities to adapt to a company's changing business environment. |
| Osterwalder and Pigneur (2009) | It explains the logic of how an organization creates value, how it provides value. |
| Mullins and Komisar (2009) | It refers to an economic model that shows the expenditures and investments you have made for various purposes at a certain time and determines whether you make a profit at the desired value. |
| Chesbrough (2010) | It is a useful framework for linking ideas and technologies to economic outcomes. |
| Ganbardella and McGahan (2010) | It is a mechanism for converting ideas into revenues at acceptable costs. |
| Debelak (2006) | It is the means by which a business aims to generate income and profits. |
| Watson (2005) | It includes the cost, structure and customer value of the company's operations, components, functions and processes. |
| Rappa (2010) | It explains where it is located in the value chain and how it makes money as a way of doing business that generates income on a sustainable basis. |

| | |
|---|---|
| Slávik (2014) | It is a machine that works for making money, a group of resources and activities, of varying degrees and operations, that aggregate decisions and results, serving to deliver value and deliver results to the customer. |

Sources: Evans et al., 2017: 2, Antikainen and Valkokari, 2016: 6-7; Slávik and Bednár, 2014: 20-21.

More recently, the definitions of business models have also included the concept of social innovation and social value creation, which is closely related to social enterprises (Easterly and Miesing 2007, Stoner and Wankel 2007 cited in Alegre and Berbegal-Mirabent, 2016: 1161). While some researchers argue that business model innovation should be new to the firm (Johnson et al., 2008; Osterwalder et al., 2005), others argue that it should be new to the industry as well. Koen et al. (2011) classifies business model innovation with three dimensions of innovation in technology, value network, and financial barrier ratio, while Giesen et al. (2007) and Lindgart et al. (2009) conceptualized business model innovation as innovations in the value proposition, revenue model, and business model. Bucherer et al. (2012) expressed business model innovation either by the origin of innovation (in response to a threat or opportunity) or by the degree of innovation (according to breakthrough in the industry, incremental and comprehensive innovation) (Foss and Saebi, 2015: 7).

Innovation is the constant replacement of existing, routine, repetitive jobs and behaviors with new ones that are more risky and uncertain in the organization. For this reason, it is difficult to manage and maintain creative behaviors in organizations. Restructuring resources and changing routines according to innovation is not an easy task (Fallon-Byrne and Harney, 2017: 22). Business model innovation depends on making changes and interacting with all components due to the processes and businesses it contains. These changes and the abundance of components make it difficult to predict whether the business model will be successful. Organizational learning is an important issue to better understand the business model innovation process: business model innovation is seen as a cognitive phenomenon, defined as representations, cognitive tools exist, based on logics and plans; these elements point to a cognitive area (Berends et al., 2016:183). Since these cognitive elements are in the business model, it is possible to connect all the parts together, to inform them of innovations and to transfer them to new applications with dynamic capabilities. Studies on innovation and organizational design show that this internal restructuring may also require reorganization of the organizational structure, the development of know-how capabilities and new organizational practices. Restructurings carried out to move the organization to a better point can cause changes and innovations within the organization. In this respect, restructuring is an element of dynamic capabilities.

Because the business model describes how an organization creates value, the business model canvas can be used as one of the competitive strategies. The business model canvas describes the relationship between business owners and their partners and customers. There are nine interrelated blocks on this canvas: (1) customer segment, (2) value proposition, (3) channel, (4) customer relationships, (5) revenue stream, (6) key resources, (7) key activities, (8) key partnership, (9) cost structure. An effective business model should answer some basic questions about the causes and goals of the company and should be simple for those involved to understand. The business model canvas is one of the most popular on the market (Slávik and Bednár, 2014: 23).

**Figure 1: Business Model Canvas**

<table>
<tr>
<td rowspan="2">Key Partners<br>From our point of view:<br>• Who are our key partners?<br>• What are the roles of our partners?<br>• What resources do we need from our partners?<br>• How do the partners benefit from the cooperation?<br>From customer point of view:<br>• How does the customer experience our partners?<br>• What kind of partnerships does the customer have and how should they be taken into account?</td>
<td>Key Resources<br>From our point of view:<br>• What skills and knowledge do we need?<br>• What other material and immaterial resources and tools are required?<br>From customer point of view:<br>• What skills and knowledge is required from the customer's side?<br>• What other customer's material and immaterial resources and tools are required?</td>
<td rowspan="2">Value Proposition<br>From our point of view:<br>• What value are we selling?<br>• What are the elements of our offering?<br>• What is unique in our offering?<br>From customer point of view:<br>• What value is the customer buying?<br>• What are the elements of customer needing?<br>• Which customer's challenges and problems need to be solved?</td>
<td>Value Creation<br>From our point of view:<br>• How is our offering embedded in the customer's world?<br>• How can we facilitate the customer to reach their goals?<br>From customer point of view:<br>• How does the value emerge in customer's practices (also from mental and emotional experiences)?<br>• How are customer's long term benefits accomplished?</td>
<td rowspan="2">Customer's World and Desire for Ideal Value<br>From our point of view:<br>• How do we get a deep insight and holistic understanding of customer's world (context, activities, practices, experiences), their future strategies, and customer's customers' world?<br>From customer point of view:<br>• Why does the customer buy?<br>• What kind of benefits does the customer aspire?<br>• Functional<br>• Economic<br>• Emotional<br>• Social<br>• Ethical<br>• Symbolic<br>• If there were no limits, what would be the customer desire for ideal situation and world?</td>
</tr>
<tr>
<td>Mobilizing Resources and Partners<br>From our point of view:<br>• How do we coordinate multiparty value creation?<br>• How do we utilize and develop partners and resources?<br>From customer point of view:<br>• How can the customer utilize and develop partners and resources?</td>
<td>Interaction and co-production<br>From our point of view:<br>• How can we support customer co-production and interaction between us and the customer?<br>From customer point of view:<br>• What are customer's activities during the use and different use contexts?<br>• What are the customer's mental models of interacting with us?</td>
</tr>
<tr>
<td colspan="2">Cost Structure<br>From our point of view:<br>• What are the costs inherent in our business model?<br>• What are our other sacrifices?<br>From customer point of view:<br>• What costs and other sacrifices are required from the customer?</td>
<td colspan="3">Revenue Streams and Metrics<br>From our point of view:<br>• What is our earnings logic and how is our financial feedback generated?<br>• How can we apply customer value-based pricing?<br>• What else valuable do we get than money?<br>• What are the key performance metrics of our business success?<br>From customer point of view:<br>• For which benefits is the customer really willing to pay and how?<br>• What is the financial value that the customer gets?<br>• What are the key performance indicators of customer's business and how are we following them?</td>
</tr>
</table>

Source: Ojasalo and Ojasalo (2015: 321).

Adopting the dynamic capabilities perspective, it is argued that dynamic capabilities are key precursors to business model innovation and implementation. Dynamic capabilities are found in the collective learning and culture of the organization and the entrepreneurial skills of the senior management team. Therefore, entrepreneurial managers have primary responsibility for recognizing the need for business model change, adjusting or inventing business models, arranging necessary assets, and restructuring the organization (Foss and Saebi, 2015: 15). According to Doz and Kosenen (2009), companies need strategic agility to change their business models in search of strategic innovation. This requires leadership meta-skills in the perception of the environment, maintaining unity in the leadership team, and the ability to reallocate resources to support new models. In this context, firms should address leadership issues to ensure that business model experiments are managed effectively and the results of their experiments take action within the organization (Chesbrough, 2010: 361-362). Successful business model innovation requires concerted and collaborative efforts from the top management team, whose leadership involvement must match the type of business model innovation envisaged. In fact, different business model innovations are associated with different management challenges and therefore require different leadership interventions to be successful (Stieglitz and Foss as cited in Foss and Saebi, 2015: 12-13). There are several barriers to business model innovation, but the way forward is for leaders to openly adopt an experimental stance towards business model innovation. Leaders can allow high fidelity, low cost, fast performance, and the initiation of useful informative experiments. These new data should be reflected in new exploratory models, enabling leaders to take action based on these findings and overcome the barriers that surround and protect the current business model (Chesbrough, 2010: 362).

Companies are expected to adjust the way they do business by bringing organizational and cultural changes in business practices and attitudes that integrate the needs and aspirations of sustainable development. This is where business models come into play (Birkin et al., 2009 cited in Alegre and Berbegal-Mirabent, 2016: 1159). Business model innovation is seen as a very important tool to encourage hybrid organizations and institutions that can combine social and economic dimensions (Mongelli and Rullani, 2017: 446). Social businesses "have to walk a fine line between achieving a social mission and meeting the requirements of the market", which entails maximizing value not only for shareholders but for all stakeholders. In order to walk in this line, it needs to innovate in existing business models, include other activities and create special business models (Santos, 2012, cited in Mongelli and Rullani, 2017: 461-462).

H3: Business model innovation trends positively and significantly affect social innovation trends.

## 3. DATA AND METHODOLOGY

The research was applied to SMEs in the province of Istanbul. The reason for the application of the research on SMEs is that they are more flexible than corporate and large companies, they produce fast solutions, they have to bear high costs due to factors such as access to financial resources, operating in a dynamic environment. Metropolitan life makes human resources very important. This seriously affects SMEs. Quantitative research method was used in the research and survey forms were used within the scope of the study. The questionnaire form consists of 2 main parts. In the first part, dynamic capabilities, transformational leadership, social innovation, business model innovation scales are included, and the second part includes questions about demographic information. The social innovation scale developed by Reşat Şekerdil, Burak Demir and Evrim Güneş (2020) was used as a 5-point Likert-type scale consisting of 8 questions. A 5-point Likert-type scale consisting of 19 questions on Transformational Leadership, developed by Reşat Şekerdil and Evrim Güneş (2022), was used. The Business Model Innovation scale developed by Verma and Bashir (2016) was used as a 5-point Likert-type scale consisting of 21 questions. A 5-point Likert-type scale consisting of 12 questions was used on Dynamic Capabilities, developed by Kaplan (2015). Science package program was used in the process of testing the main problem and sub-problems of the research. Frequency and percentage distributions have been revealed in order to reveal the demographic characteristics of the employees of the organization that make up our sample.

## 4. FINDINGS AND DISCUSSIONS

In order to determine whether the employees in the organization affect dynamic abilities, transformational leadership, social innovation, business model innovation, regression analysis was carried out, and correlation analysis was carried out to determine the direction of the relations. The results of demographic analysis are shown in Table 5. The results of dynamic capabilities scale, transformational leadership scale, business model innovation scale and social innovation scale analysis are examined with reliability analyzes in Table 6, factor analyzes in Table 7, correlation and regression analyzes in Table 8. The hypotheses related to the research results are shown in Table 9.

**Table 5: Demographic Analysis**

| | | 198 | % |
|---|---|---|---|
| **Gender** | Female | 86 | 43,4 |
| | Male | 112 | 56,6 |
| **Age** | 18-28 | 93 | 47,0 |
| | 29-39 | 67 | 33,8 |
| | 40-50 | 23 | 11,6 |
| | 51 and above | 15 | 7,16 |
| **Education** | High school | 75 | 37,90 |
| | University | 101 | 51,0 |
| | Post Graduate | 22 | 11,10 |

43.4% of the participants are female and 56.6% are male. Considering the distribution by age groups, it is seen that 47% are between the ages of 18-28, 33.80% are between the ages of 29-39, 11.60% are between the ages of 40-50, and 7.16% are 51 years old and over. The education of the participants in the sample is 37.90% high school graduate, 51.0% university graduate, 11.0% postgraduate.

**Table 6: Reliability Analysis**

| Variables | Cronbach Alpha(α) | Number of Items |
|---|---|---|
| Dynamic Capabilities | 0,962 | 12 |
| Transformational Leadership | 0,952 | 19 |
| Social Innovation | 0,890 | 8 |
| Business Model Innovation | 0,970 | 21 |

This coefficient, which takes a value between 0 and 1, shows whether the expressions in the scale show a homogeneous unity and whether they measure the same thing. The reliability of the scale, depending on the alpha coefficient: 0.00 ≤ α < 0.40, it is not reliable, 0.40≤ α < 0.60 reliability is low, 0.60≤ α < 0.80 is highly reliable, 0.80≤ α < 0.100 scale is said to be highly reliable (Kayış, 2014: 405). The Cronbach Alpha value of the Social Innovation scale is 0.890. The Social Innovation scale is highly reliable. The Cronbach Alpha value of the Dynamic Capabilities scale is 0.952. The Dynamic Capabilities scale is highly reliable. The Cronbach Alpha value of the Transformational Leadership scale is 0.952, and Transformational Leadership is highly reliable. The Cronbach Alpha value of the Business Model Innovation scale is 0.970. Business Model Innovation is highly reliable.

**Table 7: Factor Analysis**

| Variables | Number of Items | Factor Loads | Explained Variance | KMO | χ2 | Df | p |
|---|---|---|---|---|---|---|---|
| **Dynamic Capabilities** | **12** | **0,502-0,778** | **%79,843** | **0,955** | **2197,185** | **66** | **0,000** |
| Sensing Opportunities | 4 | 0,854-0,925 | %78,798 | 0,845 | 534,033 | 6 | 0,000 |
| Capture Opportunities | 4 | 0,861-0,905 | %78,160 | 0,838 | 511,798 | 6 | 0,000 |
| Restructuring | 4 | 0,857-0,918 | %79,280 | 0,847 | 542,938 | 6 | 0,000 |
| **Transformational Leadership** | **19** | **0,553-0,906** | **%80,904** | **0,942** | **3142,149** | **105** | **0,000** |
| Charisma | 6 | 0,749-0,899 | %93,242 | 0,882 | 800,560 | 10 | 0,000 |
| Individual Interest | 6 | 0,687-0,848 | %93,760 | 0,896 | 970,257 | 10 | 0,000 |
| Being a source of inspiration | 5 | 0,821-0,892 | %96,804 | 0,715 | 580,685 | 6 | 0,000 |
| **Social Innovation** | **8** | **0,705-0,798** | **%56,651** | **0,918** | **691,859** | **28** | **0,000** |
| **Business Model Innovation** | **18** | **0,508-0,770** | **%75,82** | **0,958** | **3014,493** | **153** | **0,000** |
| Value Proposition | 5 | 0,882-0,890 | %77,21 | 0,879 | 747,460 | 10 | 0,000 |
| Channels | 2 | 0,923-0,923 | %85,154 | 0,500 | 133,300 | 1 | 0,000 |
| Cost of Our Competitors and Human Capital | 5 | 0,812-0,849 | %68,579 | 0,840 | 522,925 | 10 | 0,000 |
| Value Networks, Connecting with Partners | 3 | 0,836-0,910 | %79,543 | 0,700 | 324,715 | 3 | 0,000 |
| Asset – Capabilities and Income sources | 3 | 0,879-0,903 | %79,747 | 0,738 | 297,209 | 3 | 0,000 |

KMO (Kaiser – Meyer – Olkin) and Bartlett's Test" is used as a criterion of sample adequacy. It is an indicator that compares the magnitude of the correlation coefficients with the magnitude of the partial correlation coefficients. A KMO value of 0.90 is considered excellent, 0.80 very good, 0.70 good, 0.60 moderate, 0.50 weak, less than 0.50 (Kalaycı, 2014: 322). Since the KMO value of the Social Innovation Scale is 0.918, the data set is very well suited for factor analysis. (X2=691.859; df=28 ; KMO = 0.918; p< 0.05). In terms of common variance values, it is 0.798 with the highest variance in the Social Innovation Scale structure and 0.705 with the lowest variance. The items in the Social Innovation Scale explain 56.65% of the variance. Since the KMO value of the Business Model Innovation Scale is 0.958, the data set is very well suited for factor analysis. (X2=3014,493; df=153; KMO = 0.958; p< 0.05). In terms of common variance values, it is 0.770 with the highest variance and 0.508 with the lowest variance in the Business Model Innovation structure. The items in the Business Model Innovation Scale explain 75.82% of the variance. Since the KMO value of the Dynamic Capabilities Scale is 0.955, the data set is perfectly suitable for factor analysis. (X2=2197.185; df=66; KMO = 0.955; p< 0.05). In terms of common variance values, it is 0.778 with the highest variance and 0.502 with the lowest variance in the Dynamic Capabilities Scale structure. The items in the Dynamic Capabilities Scale explain 79.843% of the variance. Since the KMO value of the Transformational Leadership Scale is 0.942, the data set is perfectly suitable for factor analysis. (X2=3142.149; df=105; KMO = 0.942; p< 0.05). In terms of common variance values, it is 0.906 with the highest variance in the Transformational Leadership Scale structure and 0.553 with the lowest variance. The items in the Transformational Leadership Scale explain 79.843% of the variance.

**Table 8: Correlation and Regression Analysis**

| Correlation Analysis, Regression Analysis: Entered Model - Dependent Variable: SI | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **Correlation** | **R** | **$R^2$** | **Adj. $R^2$** | **Sig. F Change** | **Durbin-Watson** | **F** | **Sig.** | **B** | **Std. Error** | **Beta** | **T** | **Sig.** |
| DL | 0,121 | 0,121 | 0,015 | 0,010 | 0,089 | 1,601 | 2,913 | 0,089 | 0,059 | 0,035 | 0,121 | 1,707 | 0,089 |
| EK | 0,033 | 0,033 | 0,001 | -0,004 | 0,645 | 1,611 | 0,213 | 0,645 | 0,014 | 0,030 | 0,033 | 0,461 | 0,645 |
| Bİ | 0,116 | 0,116 | 0,013 | 0,008 | 0,104 | 1,594 | 2,665 | 0,104 | 0,054 | 0,033 | 0,116 | 1,633 | 0,104 |
| KA | 0,175 | 0,175 | 0,031 | 0,026 | 0,014 | 1,619 | 6,207 | 0,014 | 0,080 | 0,032 | 0,175 | 2,491 | 0,014 |
| DY | 0,328 | 0,328 | 0,108 | 0,103 | 0,000 | 1,645 | 23,635 | 0,000 | 0,184 | 0,038 | 0,328 | 4,862 | 0,000 |
| YY | 0,324 | 0,324 | 0,105 | 0,100 | 0,000 | 1,681 | 22,950 | 0,000 | 0,174 | 0,036 | 0,324 | 4,791 | 0,000 |
| FY | 0,334 | 0,334 | 0,112 | 0,107 | 0,000 | 1,632 | 24,661 | 0,000 | 0,181 | 0,036 | 0,334 | 4,966 | 0,000 |
| FS | 0,274 | 0,274 | 0,075 | 0,070 | 0,000 | 1,620 | 15,933 | 0,000 | 0,141 | 0,035 | 0,274 | 3,992 | 0,000 |
| İS | 0,297 | 0,297 | 0,088 | 0,084 | 0,000 | 1,613 | 19,004 | 0,000 | 0,179 | 0,041 | 0,297 | 4,359 | 0,000 |
| VYGK | 0,286 | 0,286 | 0,0816 | 0,0769 | 0,000 | 1,621 | 17,404 | 0,000 | 0,156 | 0,037 | 0,286 | 4,172 | 0,000 |
| DEAOB | 0,308 | 0,308 | 0,095 | 0,090 | 0,000 | 1,662 | 20,509 | 0,000 | 0,157 | 0,035 | 0,308 | 4,529 | 0,000 |
| RMİS | 0,221 | 0,221 | 0,049 | 0,044 | 0,002 | 1,600 | 10,094 | 0,002 | 0,134 | 0,042 | 0,221 | 3,177 | 0,002 |
| K | 0,282 | 0,282 | 0,080 | 0,075 | 0,000 | 1,638 | 16,934 | 0,000 | 0,129 | 0,031 | 0,282 | 4,115 | 0,000 |
| DÖ | 0,271 | 0,271 | 0,073 | 0,069 | 0,000 | 1,595 | 15,497 | 0,000 | 0,149 | 0,038 | 0,271 | 3,937 | 0,000 |
| **Correlation Analysis, Regression Analysis: Entered Model - Dependent Variable: DL** | | | | | | | | | | | | | |
| EK | 0,879 | ,879 | 0,773 | 0,772 | 0,000 | 1,860 | 666,97 | 0,000 | 0,742 | 0,029 | 0,879 | 25,825 | 0,000 |
| Bİ | 0,952 | ,952 | 0,907 | 0,906 | 0,000 | 2,139 | 1909,86 | 0,000 | 0,952 | 0,021 | 0,913 | 43,702 | 0,000 |
| KA | 0,913 | ,913 | 0,834 | 0,833 | 0,000 | 1,578 | 985,42 | 0,000 | 0,856 | 0,027 | 0,913 | 31,391 | 0,000 |
| DY | 0,426 | ,426 | 0,181 | 0,177 | 0,000 | 1,417 | 43,457 | 0,000 | 0,489 | 0,074 | 0,426 | 6,592 | 0,000 |
| YY | 0,482 | ,482 | 0,232 | 0,228 | 0,000 | 1,502 | 59,340 | 0,000 | 0,530 | 0,068 | 0,482 | 7,703 | 0,000 |
| FY | 0,370 | ,370 | 0,137 | 0,133 | 0,000 | 1,412 | 31,130 | 0,000 | 0,410 | 0,073 | 0,370 | 5,579 | 0,000 |
| FS | 0,358 | ,358 | 0,128 | 0,124 | 0,000 | 1,437 | 28,793 | 0,000 | 0,377 | 0,070 | 0,358 | 5,366 | 0,000 |
| İS | 0,329 | ,329 | 0,108 | 0,104 | 0,000 | 1,378 | 23,744 | 0,000 | 0,404 | 0,083 | 0,329 | 4,873 | 0,000 |
| VYGK | 0,322 | ,322 | 0,104 | 0,099 | 0,000 | 1,438 | 22,707 | 0,000 | 0,359 | 0,075 | 0,322 | 4,765 | 0,000 |
| DEAOB | 0,273 | ,273 | 0,075 | 0,070 | 0,000 | 1,424 | 15,830 | 0,000 | 0,286 | 0,072 | 0,273 | 3,979 | 0,000 |
| RMİS | 0,362 | ,362 | 0,131 | 0,126 | 0,000 | 1,408 | 29,502 | 0,000 | 0,448 | 0,082 | 0,362 | 5,432 | 0,000 |
| K | 0,159 | ,159 | 0,025 | 0,020 | 0,025 | 1,492 | 5,090 | 0,025 | 0,148 | 0,066 | 0,159 | 2,256 | 0,025 |
| DÖ | 0,306 | ,306 | 0,094 | 0,089 | 0,000 | 1,407 | 20,229 | 0,000 | 0,344 | 0,077 | 4,4978 | 4,498 | 0,000 |
| **Correlation Analysis, Regression Analysis: Entered Model - Dependent Variable: DY** | | | | | | | | | | | | | |
| YY | 0,930 | 0,930 | 0,865 | 0,864 | ,000 | 1,736 | 1257,379 | ,000 | 0,891 | 0,025 | 0,930 | 35,460 | ,000 |
| FY | 0,959 | 0,959 | 0,920 | 0,919 | ,000 | 2,2512 | 2242,346 | ,000 | 0,924 | 0,020 | 0,959 | 47,353 | ,000 |
| FS | 0,947 | 0,947 | 0,898 | 0,897 | ,000 | 1,743 | 1719,373 | ,000 | 0,868 | 0,021 | 0,947 | 41,465 | ,000 |
| İS | 0,755 | 0,755 | 0,570 | 0,568 | ,000 | 1,850 | 260,276 | ,000 | 0,808 | 0,050 | 0,755 | 16,133 | ,000 |
| VYGK | 0,690 | 0,690 | 0,477 | 0,474 | ,000 | 1,856 | 178,428 | ,000 | 0,670 | 0,050 | 0,690 | 13,358 | ,000 |
| DEAOB | 0,644 | 0,644 | 0,415 | 0,412 | ,000 | 1,840 | 139,108 | ,000 | 0,587 | 0,050 | 0,644 | 11,794 | ,000 |
| RMİS | 0,739 | 0,739 | 0,546 | 0,544 | ,000 | 1,777 | 236,176 | ,000 | 0,797 | 0,052 | 0,739 | 15,368 | ,000 |
| K | 0,564 | 0,564 | 0,318 | 0,315 | ,000 | 1,947 | 91,480 | ,000 | 0,458 | 0,048 | 0,564 | 9,565 | ,000 |
| DÖ | 0,710 | 0,710 | 0,505 | 0,502 | ,000 | 1,885 | 199,639 | ,000 | 0,696 | 0,049 | 0,710 | 14,129 | ,000 |

The Pearson correlation coefficient is used to measure the degree of linear relationship between two continuous variables. In other words, the question of whether there is a significant relationship between the two variables is answered. The Pearson correlation coefficient r takes values between -1 and +1". If it is in the negative direction, it is said that there is an inverse relationship, and if it is in the positive direction, there is a relationship in the same direction. If 0, there is no relationship between the two variables. Pearson correlation coefficient interpretation is; r = 0.00-0.25 very weak, 0.26-0.49 weak, 0.50-0.69 moderate, 0.70-0.89 high, 0.90-0.100 very high (Sungur, 2014: 116). The correlation coefficients between dynamic capabilities, transformational leadership, social innovation, business model innovation variables are shown. Durbin-Watson coefficient is used to test autocorrelation. "The DW value ranges between 0-4 and values close to 0 indicate extremely positive correlation, values close to 4 indicate extremely negative correlation, and values close to 2 indicate no autocorrelation." (Ağca and Büyükaslan, 2016: 214) The Durbin-Watson statistics value, which shows whether there is autocorrelation between the values, is 1.660, and it can be said that there is no autocorrelation. There is no significant relationship between transformational leadership and social innovation, transformational leadership sub-dimensions Individual Interest, Inspiration and social innovation variable (p>0.05). Charisma (r=.175; p<0.01), which is the sub-dimension of transformational leadership, seems to have a very weak and positive relationship.

A weak and positive relationship between Dynamic Capabilities and social innovation (r=.328; p<0.05), and Sensing Opportunities (r=.274; p<0.05) with Dynamic Capabilities sub-dimensions very weak and positive, Capturing Opportunities (r=. ,334; p<0.05), Restructuring (r=.324; p<0.05) and social innovation variable were weak and positive. “Business Model Innovation” has a significant but weak effect on “social innovation” (r=.297; p<0.05), Business Model Innovation sub-dimensions has a significant but weak effect on “social innovation”; Value Proposition (r=.271; p<0.05), Channels (r=.282; p<0.05), Cost of Our Competitors and Human Capital (r=.271; p<0.05), Value Networks, Connection with Partners (r=.308; p<0.05), Asset – Capabilities and Income sources (r=.286; p<0.05). As a result of the regression analysis, the transformational leadership variable does not explain the social innovation variable (p>.000). As a result of the regression analysis, the Dynamic Capabilities variable explains the social innovation variable by 10% (β=0.103; F = 23,635 p=, 000). Dynamic Capabilities explain social innovation with sub-dimensions of Sensing Opportunities 7%, Capturing Opportunities 10%, Restructuring 10% (p<0.05). As a result of the regression analysis, the Business Model Innovation variable explains the social innovation variable by 8% (β=0.084; F = 19,004 p=, 000). The sub-dimensions of Business Model Innovation explain social innovation with Value Proposition 6%, Channels 7%, Cost of Our Competitors and Human Capital 4%, Value Networks, Connection with Partners 9%, Asset – Capabilities and Income sources 7% (p<0.05). It is seen that there is a very high and positive relationship between the transformational leadership and the sub-dimensions of Individual Interest and Inspiration (p>0.05). A weak and positive relationship between Dynamic Capabilities and transformational leadership (r=.426; p<0.05), and Sensing Opportunities (r=.358; p<0.05) with Dynamic Capabilities sub-dimensions very weak and positive, Seizing Opportunities (r=. ,370; p<0.05), Restructuring (r=,482; p<0.05) and transformational leadership variable were weak and positive.

“Business Model Innovation” has a significant but weak effect on “Transformational leadership” (r=.329; p<0.05). Business Model Innovation sub-dimensions has a significant but weak effect on “Transformational leadership”; Value Proposition (r=.306; p<0.05); Channels (r=.159; p<0.05), Cost of Our Competitors and Human Capital (r=.362; p<0.05), Value Networks, Connection with Partners (r=.273; p<0.05), Asset – Capabilities and Income sources (r=.322; p<0.05). As a result of the regression analysis, the Dynamic Capabilities variable explains the transformational leadership variable by 17% (β=0.177; F=43.457 p=.000). The Dynamic Capabilities sub-dimensions, Sensing Opportunities 12%, Seizing Opportunities 13%, Restructuring 22% explain transformational leadership (p<0.05). As a result of the regression analysis, the Business Model Innovation variable explains the transformational leadership variable by 10% (β=0.104; F=23,744 p=.000). Business Model Innovation sub-dimensions, Value Proposition 9%, Channels 2%, Cost of Our Competitors and Human Capital 12%, Value Networks, Connection with Partners 7%, Asset – Capabilities and Income sources 32% (p<0.05). It is seen that there is a very high and positive relationship between Dynamic Capabilities and the sub-dimensions of Dynamic Capabilities, Sensing Opportunities, Seizing Opportunities, and Restructuring (p>0.05). “Business Model Innovation” has a significant but moderate effect on “dynamic capabilities” (r=.568; p<0.05), Business Model Innovation sub-dimensions has a significant effect on “dynamic capabilities”; Value Proposition (r=.505; p<0.05), Channels (r=.315; p<0.05), Cost of Our Competitors and Human Capital (r=.546; p<0.05), Value Networks, Connection with Partners (r=.415; p<0.05), Asset – Capabilities and Income sources (r=.477; p <0.05). As a result of the regression analysis, the Business Model Innovation variable explains the dynamic capabilities variable by 56% (β=0.568; F=260.276 p=.000). Business Model Innovation sub-dimensions, Value Proposition 50%, Channels 31%, Cost of Our Competitors and Human Capital 54%, Value Networks, Connection with Partners 41%, Asset – Capabilities and Income sources 47% (p<0.05).

In summary, the transformational leadership variable does not explain the social innovation variable (p>.000). The Business Model Innovation variable explains the social innovation variable by 8% (β=0.084; F = 19,004 p=, 000). The Business Model Innovation variable explains the transformational leadership variable by 10% (β=0.104; F=23,744 p=0.000). Dynamic Capabilities variable explains social innovation variable by 10% (β=0.103; F = 23,635 p=, 000). Although the Dynamic Capabilities variable explains the transformational leadership variable at a rate of 17% (β=0.177; F = 43.457 p=, 000), its contribution was found to be weakly positive.

**Table 9: Hypotheses**

| | |
|---|---|
| H1: Transformational Leadership tendencies affect social innovation tendencies positively and significantly. | Not Verified |
| H2: Dynamic talent trends positively and significantly affect social innovation trends. | Verified |
| H3: Business Model Innovation trends positively and significantly affect social innovation trends. | Verified |
| H4: Transformational Leadership tendencies positively and significantly affect dynamic talent tendencies. | Verified |
| H5: Transformational Leadership trends positively and significantly affect business model innovation trends. | Verified |
| H6: Business Model Innovation trends positively and significantly affect dynamic capabilities trends. | Verified |

## 5. CONCLUSION AND IMPLICATIONS

As it is known, in the literature, social innovation has been framed with a classification that includes social entrepreneurship, social policies, non-governmental organizations and public institutions. Likewise, in the literature, businesses, employees, customers, suppliers, entrepreneurs, and authorities regulating commercial mechanisms have been framed with a comprehensive classification. In our opinion, this framework represents a classical approach. The starting point of this study is the fact that social innovation cannot be carried out only by social entrepreneurs, non-governmental organizations and the state. Businesses enable their employees to change their perspectives on life and integrate them with society. Therefore, individuals within the organization can be socially innovative as well as benefit directly or indirectly from social innovation. Based on this phenomenon, it is known that business model innovation, transformational leadership and dynamic abilities are meaningful among themselves in the business literature. This significance has been tested in social innovation in business organizations.

The aim of this study is to provide a theoretical understanding of transformational leadership, dynamic capabilities and business model innovation processes that may be necessary for strategic management in enterprises, and to investigate the interaction of these factors and their effects on social innovation as a tool. Another aim is to reveal the fact that businesses can be accepted as units that design the lifestyles of individuals and societies, emphasize world peace and the sense of humanity, and increase the control and effectiveness of public power, beyond the units that invest, produce and provide employment. For instance; businesses can provide opportunities that the state cannot access, do or provide within the scope of sustainability and social responsibility studies. With the qualified human resources in the enterprises, they can have teams that are more equipped, educated and with good governance skills than those working in public institutions and organizations. Businesses can contribute to the elimination of the deficiencies of public personnel and the supervision of public authority by transferring the increased information capacities in the field they work to public services. In this context, it is possible to see businesses as journalists. In terms of integrating the resources they have with the society in an effective and efficient way, it is possible to directly increase the working life and the quality of work life for employees, namely individuals, by investing in these areas. It should not be forgotten that as the number of prudent business people increases, the welfare of countries increases. In this context, evaluating businesses with classical approaches is now like sitting at home by candlelight. This study also expresses the inadequacy of non-governmental organizations. Non-governmental organizations are also organizations after all. They can engage in social initiatives in line with their goals and objectives and within the scope of their power. However, the target audience and local distributions of each vary from region to region and condition to condition. Thus, since the impact of every non-governmental organization will have a relative impact like every business, it will be possible to benefit from relative social policies and social services.

Our aim in this study is not to call on businesses to stop making profits. On the contrary, the market is no longer responsive because of the same products and services. Both profit will be made and the commercial and social experiences obtained by increasing the number of beneficiaries in the society can be turned into gains at the public level, the top ideal that turns from the classical company understanding to social life design is discussed.

These evaluations do not make companies sublime. It points to those who can be sublime or it is desired to draw attention to how they can gain and maintain these features. However, there are measurable and unmeasurable behaviors in organizational behavior. For instance; the situational approach states that there is no single best leadership style. Abstract and broad concepts such as leadership, entrepreneurship and innovation lead to the emergence of new styles in every condition and context. This situation can also be seen in other behavioral tendencies of organizational behavior. Thus, there may be difficulties in tools and models that can truly measure the behavior that is desired to be measured in enterprises. This limitation can also be explained by the concept of bounded rationality.

In fact, since the focus of decision making is to reach the most satisfactory decision, it is not possible to expect organizational behavior issues to explain all the actions and activities of the organization. It is seen that the results obtained in this study provide weak and low rate explanations in general. In this context, it can be stated that the literature makes important contributions to the understanding of the subjects by separating the subjects, but eliminates the areas where new information can develop as a result of the analysis and synthesis of the information. Therefore, this study is based on the assumption that the most satisfactory decisions belong to the managers, and "what will happen if it happens?" It has questioned the handling of findings and perspectives in order to encourage studies that can answer the question. This inquiry makes suggestions for future studies on which stage and in which areas social innovation can be included in the activities of businesses. Since the quantitative scale tools are limited and the purpose of discovery of qualitative research creates concerns about the explanation of abstract and broad concepts in the universal sense, another suggestion is to develop different approaches and tools to overcome these concerns.

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# BIBLIOMETRIC ANALYSIS OF STUDIES ON HRM DURING COVID-19 PANDEMIC

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## ABSTRACT

**Purpose-** The purpose of this research is to determine the course of HRM research studies conducted during the COVID 19 Pandemic period by focusing on the author, country, citation, subject, etc.
**Methodology-** The research was carried out with the method of bibliometric analysis. The articles containing the subjects of COVID-19 Pandemic and HRM published in the Web of Science Core Collection database between 2020 and 2021 were examined within the scope of the research.
**Findings-** As a result of the research conducted, it is observed that 206 publications covering the subjects of pandemic and HRM were made between 2020-2021. These publications were included in 139 sources (journals, books, etc.), written by 1004 authors. Citation rate per article was 6.019 and the collaboration index of authors was quite high (5.72). Moreover, it is found that the journal publishing the most articles on HRM during the pandemic period was BMJ Open. The most relevant institution on the subject was Shanghai Jiao Tong University with 14 articles. The countries publishing the most articles were China, the USA and India, respectively, and the countries that received the most citations per article were Brazil, Denmark and Kuwait. It is determined that the most cited article worldwide is Carnevale JB 2020 with 122 citations. In the keyword analysis of the author, it is revealed that the terms of COVID-19, human resource management, COVID-19 pandemic, pandemic, coronavirus, crisis management, health policy, public health, human resource development and mental health are mostly used.
**Conclusion-** It is believed that the findings obtained as a result of the research will contribute to the literature. Carrying out the research using a single database (Web of Science) constitutes an important limitation for the research.

**Keywords:** Human resources, human resources development, Covid-19, pandemic, bibliometric analysis.
**JEL Codes:** M12, M15, M54

## 1. INTRODUCTION

COVID-19 Pandemic profoundly impacted both societies and businesses thus causing a major, unexpected and sudden changes in the work lives of billions of workers worldwide. Businesses and employees were forced to transform their operational routines almost overnight. This situation made it necessary for managers to make decisions under uncertain conditions and to enact new arrangements (Sanders et al., 2020). The importance and responsibilities of HRM units and HRM managers increased in the implementation of these changes and innovations. The most important reason for this is that HRM units had to undertake all the coordination process between employees and business managers during the management of the Pandemic. In addition, HRM units were required to regulate the changing work conditions and ensure that the employees adapt to these conditions as well. Ensuring hygienic conditions, arranging telework conditions, keeping morale and motivation of employees high etc. can be named as examples.

In parallel with the changing and increasing responsibilities of HRM departments during the COVID-19 Pandemic, changes were also observed in HRM research studies. In this period, interest in teleworking, work-life balance, wellbeing, etc. increased slightly more. Therefore, the aim of this research is to determine the course of HRM research studies during the COVID-19 Pandemic period by focusing on the author, country, citation, subject, etc. The research questions guiding this study are:

1. Which HRM issues were mostly studied during COVID-19 Pandemic period?
2. Which countries and which authors conducted the most HRM research during COVID-19 Pandemic?
3. Which authors and countries received the most citations in HRM research during COVID-19 Pandemic?
4. What would be the course of research in the field of HRM after COVID-19 Pandemic?

Within the scope of this research, which was carried out to determine the course of HRM research during Covid-19 Pandemic, a literature review was first conducted. Bibliometric analysis method was utilized during this and analysis process. Bibliometrics, first proposed by Pritchard (Pritchard, 1969) instead of statistical bibliography has the potential to offer a systematic, transparent and reproducible review process based on comprehensive measurement of scientific activity (Aria & Cuccurullo, 2017).

Information about the design and methodology of the research is given in the method section. Findings obtained as a result of the research are explained in the findings section. In the conclusion section, the research findings were evaluated in the light of the literature.

## 2. LITERATURE REVIEW

COVID-19 was first detected in Wuhan, China. On 31 December 2019, China informed the World Health Organization (WHO) about pneumonia cases of unknown cause and rapid spread. It was defined by WHO on 7 January 2020 as a new type of "CoV" that has not been detected in humans before. COVID-19 was first detected outside of China on 13 January 2020 in Thailand. Afterwards, many countries, such as Japan and South Korea, reported cases to WHO. The first COVID-19 case in Turkey was detected on March 11, 2020 (Çankaya, 2020).

Upon the break out of COVID-19, governments had to take drastic measures with the aim of stopping the spread of the virus. This new global pandemic brought the global economy down drastically, suspending public life from time to time. In this process, industries and economies all over the World faced an unprecedented challenge to survive. Many sectors were forced to lay off their employees. The downsizing of economies worldwide due to COVID-19 became a major concern for the current and future workforce. During COVID-19 Pandemic, employees started to experience anxiety about maintaining their jobs and advancing their careers (Mahmud et al., 2021).

Hecklau et al. (2016: 2) define human resource management as a strategic approach to the efficient employment and development of a highly committed and qualified workforce in order to achieve the goals of businesses. COVID-19 Pandemic created a particularly challenging environment for human resource management. While managers were trying to adapt to the radical changes experienced in the workforce, HRM had to quickly respond to "unknown unknowns" in order to support them. For instance, employees previously spending all or most of their time working within the physical confines of their workplaces now needed to quickly adapt to teleworking environments (Carnevale & Hatak, 2020: 183). The importance of HRM units in the businesses increased along with COVID-19 Pandemic. The reason for this is that all businesses were affected by COVID-19 Pandemic, and thus being obliged to carry out all coordination between employees and business managers. In addition, HRM departments had to regulate changing business conditions and ensure that employees adapt to these conditions. Human resources management has become one of the most important areas of management practice due to its central role in the coordination of all processes in the COVID-19 Pandemic environment, where businesses abandon many existing practices and turn to new ones (İlhan, 2020: 294).

During the "new normal" stage caused by COVID-19 Pandemic, many white-collar and professional workers had to work from home (Sanders et al., 2020: 289). The advantages of teleworking may include a better work-life balance, increased creativity, higher productivity, less stress and less carbon emissions, etc. When working remotely, there is no loss of time experienced commuting to work. If this time is allocated to home or social needs while working remotely, more work-life satisfaction can be achieved. However, despite the advantages of telework, there are also some disadvantages. One of the most important disadvantages of telework is social isolation. Since the employees are not present in the office environment, they are in contact with a limited number of people. This mostly affects the psychology of the employees negatively. Another disadvantage of telework is experiencing difficulty in maintaining the home-work-life balance (Russo et al., 2021: 5).

Examining the research on HRM during COVID 19 Pandemic period, it is inferred that many studies were conducted in this sense. For example, Carnevale & Hatak (2020) dwelled on the changing work pattern of HRM due to COVID-19, the challenges faced by employees during telework, the opportunities brought by the pandemic, and the adaptation of employees to the pandemic and their welfare. Dirani et al. (2020), on the other hand, revealed the position of HRD practitioners to support leaders adapting to new conditions during the COVID-19 Pandemic and their forecasts for HRD research and practices in the post-pandemic period. They also discussed the effects on employees by addressing COVID-19 Pandemic as a crisis. In the study conducted by Arora & Suri (2020), COVID-19 Pandemic was evaluated as a crisis and the HRM interventions that could be carried out by HRM professionals to combat this crisis were discussed. Hite & McDonald (2020) addressed the issue of the career post-COVID-19 Pandemic. They discussed that career changes would be inevitable with the effect of COVID-19

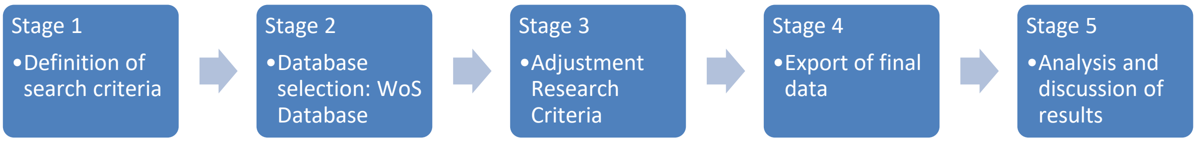
Pandemic, that COVID-19 Pandemic brought uncertainties to career plans, and that HRD would play an active role in shaping the future workforce. Moreover, they focused on the concepts of career shock, resilience and sustainable career. Mahmud et al. (2021) also examined the impact of COVID-19 Pandemic on the future career concerns of the workforce. In addition, they investigated the mediating role of COVID-19 depression in terms of relationship between fear of COVID-19 and career concern in the workforce.

Yawson (2020) addressed the subject of strategic resilience analysis of HRD research and practices after COVID-19 Pandemic. In the study conducted by H. Chen & Eyoun (2021), the relations between employees' fear of COVID-19, job insecurity and emotional burnout were investigated. They also examined the moderator role of employee awareness and perceived organizational support in the study. Ipsen et al. (2021) discussed the advantages and disadvantages of telework during COVID-19 Pandemic. In the study of Bhumika (2020) the relationship between work-life balance and emotional burnout of those working from home during the curfew in the COVID-19 Pandemic was investigated. Collings et al. (2021) examined how the HRM function responded to the challenges of COVID-19 crisis and the role of HRM in mapping the way out of the crisis. In the study conducted by He et al. (2020), it was aimed to determine the effect of socially responsible human resource management on employees' fears of external threats during COVID-19 Pandemic. Ngoc Su et al. (2021) carried out a study and focused on how HRM practices were adopted to improve organizational resilience during the COVID-19 crisis, with employees regarded as a critical dimension in tourism and hospitality services. Diab-Bahman & Al-Enzi (2020) conducted their study in order to provide HRM policy makers with an idea of how the changes emerged in working conditions affected employees during the COVID-19 Pandemic. According to the study conducted by Bierema (2020), COVID-19 process was seen as an opportunity for HRM studies. Bierema (2020) also argued that bold, critical research works prioritizing organization and social justice and creating sustainable organizations and communities for human beings can be carried out in the new normal period. Agarwal (2021) examined the impact of COVID-19 on the welfare of hotel employees through investigating the HRM practices adopted by hotels during COVID-19. Bennett & McWhorter (2021), examined remote working and the resulting digital human resources management processes to ensure business continuity during the COVID-19 Pandemic.

## 3. DATA AND METHODOLOGY

There are four main stages in a typical bibliometric analysis. These stages are shown in Figure 1.

**Figure 1: Principal Stages in a Typical Bibliometric Research**




Source: Öztürk (2021)

In bibliometric research, it is important to create data sets rigorously and comprehensively in order to make qualified literature reviews and analysis (Gürler, 2021; Seyran, 2021). Accordingly, a search strategy such like following was employed as initiative to research.

### 3.1. Search Strategy and Source of Bibliometric Data

The articles constituting the data set of the study were obtained from the Web of Science Core Collection database. The search strategy is used as following:

"sars2" (Title) or "sars-2" (Title) or "SARS 2" (Title) or "novel corona virus pneumonia" (Title) or "new human coronavirus" (Title) or "2019 novel coronavirus" (Title) or "2019 novel coronavirus infection" (Title) or "novel coronavirus" (Title) or "new coronavirus" (Title) or "severe acute respiratory syndrome coronavirus 2" (Title) or "sudden acute respiratory syndrome coronavirus 2" (Title) or "China coronavirus" (Title) or "Wuhan coronavirus" (Title) or "Wuhan seafood market pneumonia virus" (Title) or "covid-19" (Title) or "COVID19 virus" (Title) or "Coronavirus disease 2019" (Title) or "coronavirus disease-19" (Title) or "SARS-CoV-2" (Title) or "2019-nCoV" (Title) or "2019-nCoV disease" (Title) or "2019-nCoV infection" (Title) or "Coronavirus" (Title) and 2022 or 2018 or 2019 (Exclude – Publication Years) and 2020 or 2021 (Publication Years) and Articles or Review Articles (Document Types) and Articles or Review Articles (Document Types) and Book Chapters or Data Papers (Exclude – Document Types) and Proceedings Papers or Retracted Publications or Publication With Expression Of Concern or Withdrawn Publication (Exclude – Document Types) and English (Languages) and "International Human Resource Management" Or "Human Resource " Or "Hrm" Or "Personnel Management" Or "Human Resource Development" Or "Hrd" Or "People Management" Or "People-management" (Search within all fields)

In line with the given search strategy, 339 articles were accessed. Summaries of all articles found have been examined by authors and irrelevant of them were extracted from analyzing process. Residual 206 articles were involved in the analysis process through exporting relevant raw data.

### 3.2. Bibliometric Analysis

Bibliometric analysis uses mathematical and statistical methods to examine the formal properties of knowledge domains (Qiu et al., 2017). Bibliometric analysis includes several approaches such as citation analysis (CA), co-occurrence or co-word analysis, co-citation analysis (CCA) or co-authorship analysis (Bağış & Ardıç, 2021; Kurutkan & Orhan, 2018) that can be used with multiple combinations. Bibliometric analysis of the article was made using the R 4.0.3 package program. Also, the software used for the bibliometric analysis within the scope of the study is "biblioshiny", which is an R-based library and the web-based interface of "bibliometrix" (Prajapati, 2013; R Core Team (2020), n.d.).

The units and types of analysis performed are shown in Table 1.

**Table 1: Analysis Unit and Sub-Components (Analysis Type) Used in the Study**

| | |
|---|---|
| **Data set** | Main Information About Data |
| | Average Number of Citations Per Article |
| | Three-field plot |
| **Sources** | Most Relevant Sources |
| | Bradford's Law |
| **Authors** | Most Relevant Affiliations |
| | Corresponding Author's Country |
| **Documents** | Most Global Cited Documents |
| | Most Local Cited Documents |
| | Most Frequent Words |
| | Word Analysis |
| **Conceptual Structure** | Thematic Evolution Map |
| | Most Contributing Documents |
| | Most Cited Documents |
| | Co-occurrence network |
| | Factorial Analysis |
| **Intellectual Structure** | Co-citation Network |
| **Social Structure** | Collaboration Network |
| | Country Collaboration Map |

## 4. FINDINGS AND DISCUSSIONS

The basic information of the articles is shown in Table 2. When Table 2 is examined, it is seen that 206 articles analyzed in the study cover the years 2020 and 2021. There are 139 sources (journals, books, etc.) in which these articles are published. Citation rate per article is 6.019, The number of single-authored articles is 37, and the ratio of single-authored articles to all articles is 0.18. The authors' collaboration index is 5.72 as a quite high value. This shows that the field is a suitable field for different authors to work together.

### 4.1. Dataset

This section gives general information about data set such as document types, document contents, authors etc. included in the analysis process.

**Table 2: Descriptive Information Relating Dataset**

| Description | Results |
|---|---|
| **MAIN INFORMATION ABOUT DATA** | |
| Timespan | 2020:2021 |
| Sources (Journals, Books, etc.) | 139 |

| | |
|---|---|
| Documents | 206 |
| Average years from publication | 0,277 |
| Average citations per documents | 6,019 |
| Average citations per year per doc | 4,816 |
| References | 9434 |
| **DOCUMENT TYPES** | |
| article | 162 |
| article; early access | 28 |
| review | 15 |
| review; early access | 1 |
| **DOCUMENT CONTENTS** | |
| Keywords Plus (ID) | 386 |
| Author's Keywords (DE) | 681 |
| **AUTHORS** | |
| Authors | 1004 |
| Author Appearances | 1024 |
| Authors of single-authored documents | 37 |
| Authors of multi-authored documents | 967 |
| **AUTHORS COLLABORATION** | |
| Single-authored documents | 37 |
| Documents per Author | 0,205 |
| Authors per Document | 4,87 |
| Co-Authors per Documents | 4,97 |
| Collaboration Index | 5,72 |

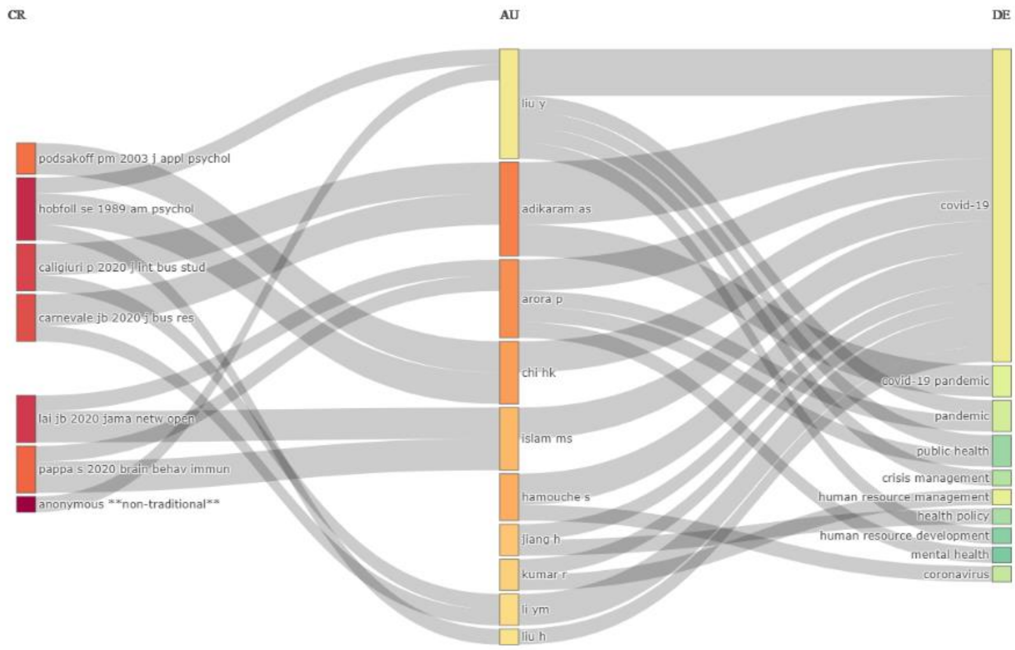
We observe the publication process started in 2020 (49 article) and peaked in 2021 (128 article). The annual growth rate increased by 261.22% and the average number of citations per article which was 14.63 in 2020, decreased to 3.85 in 2021

**Table 3: Average Number of Citations per Article**

| Year | N | Mean TC per Art | Mean TC per Year | Citable Years |
|---|---|---|---|---|
| **2020** | 49 | 14,633 | 7,316 | 1 |
| **2021** | 128 | 3,860 | 3,860 | 0 |

A three-field plot built upon a Sankey diagram depicting the connections from cited references to authors and themes is displayed in Figure 2. The authors in the middle part of the figure have expanded the concepts on the right by referring to the references on the left. Apart from COVID-19, it is seen that main concepts such as crisis management, health policy, organization of health services, public health, mental health, etc. come to the fore, along with remote work, burnout, career development and change management. Liu Y, Adikaram AS and Arora P are the authors who feed these concepts the most. The references that these authors refer to the most while feeding these concepts can be observed as Hobfoll SE 1989, Podsakoff PM 2003, Lai JB 2020 and Pappa S 2020, Caligiuri P 2020 and Carnevale JB 2020.

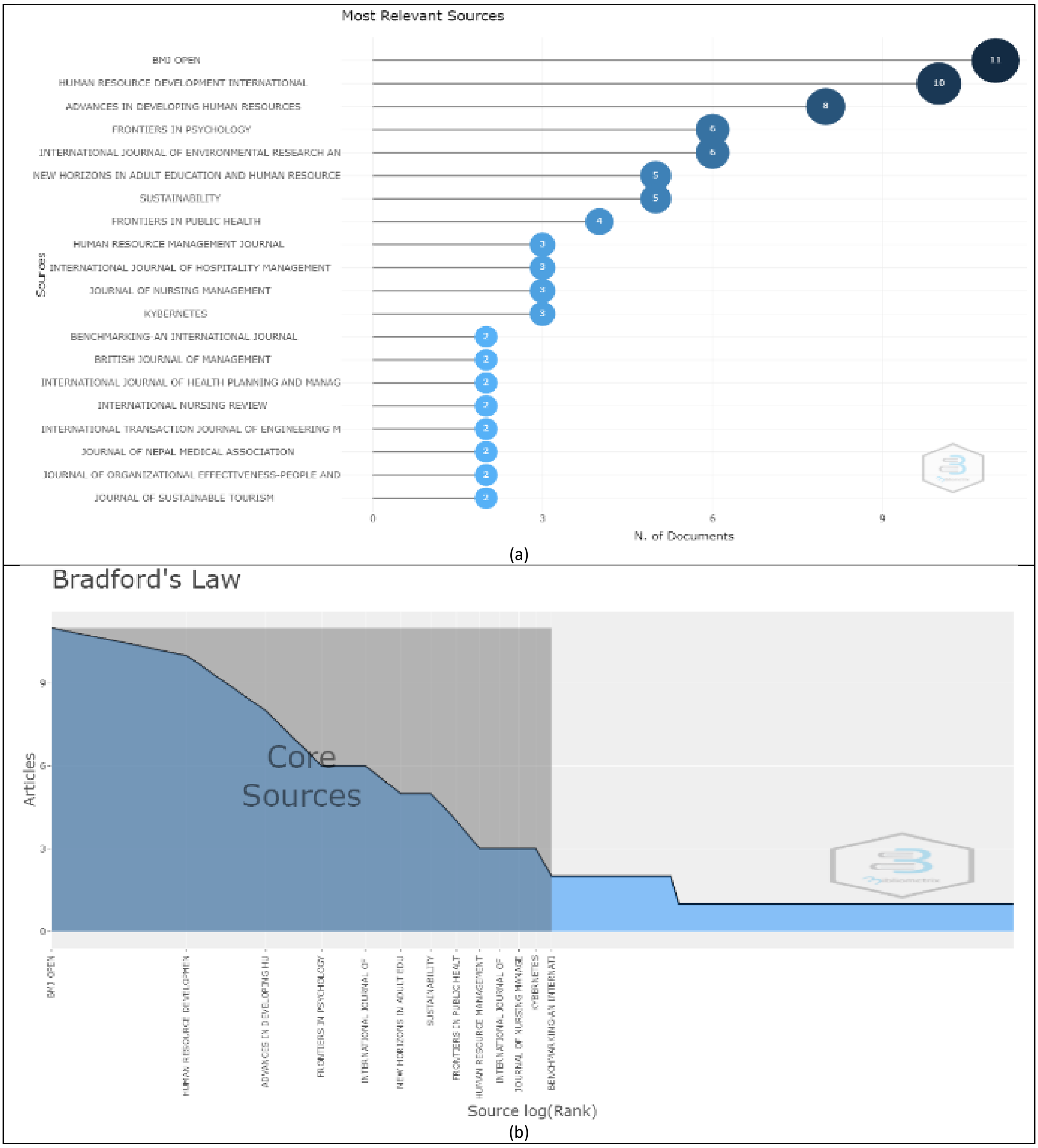
**Figure 2: Three-Field Plot Showing the Network between Authors (Middle), Cited References (Left) and Themes (Right)**




## 4.2. Sources

The top 20 most relevant resources are as shown in Figure 3(a). The journal that publishes the most articles on the subject is BMJ Open. The journal is published at regular intervals and 5-year impact factor of the journal is stated as 3.424. articles published in BMJ Open accounts for 13,25% of the articles published in the first 20 journals. The Journal also published 49,39% of the articles published in the first five journals. Furthermore, it is observed that articles in any field are generally published in certain sources. Therefore, according to the Bradford's Law, a small number of journals in a particular subject area cover a significant portion of the total articles in a given area, while an increasing number of journals publish fewer articles in that area (Şimşir, 2021). When the sources are sorted in descending order according to the number of publications, the sources can be classified into three groups, each of which covers one-third of the publications. The first group formed as a result of this classification is the core resources (Dadkhah et al., 2020). Accordingly, 13 journals can be seen in the Zone1 as core resources in Figure 3(b). It draws attention that the journals in Figure 3(b) are the same as the top 5 journals in the most relevant sources given in Figure 3(a). Also, the area covered by the BMJ Open is more than other journals, as can be seen from the Figure 3(a) depicting Bradford's Law. It is seen that 9.35% of the total number of journals, which is 139, consists of core resources. However, the articles published in the top 5 core journals constitute 19.90% of all articles included in the analysis.

**Figure 3: (a). Most Relevant Sources (b). Bradford's Law**




## 4.3. Authors

Figure 4 shows most relevant affiliations. It can be seen that top 5 most relevant institutions are Shanghai Jiao Tong Univ with 14 articles, Huazhong Univ Sci and Technol with 10 articles, London Sch Hyg and Trop Med with 9 articles, Tillburg Univ with 7 articles and All India Inst Med Sci with 6 articles

**Figure 4: Most Relevant Affiliations**

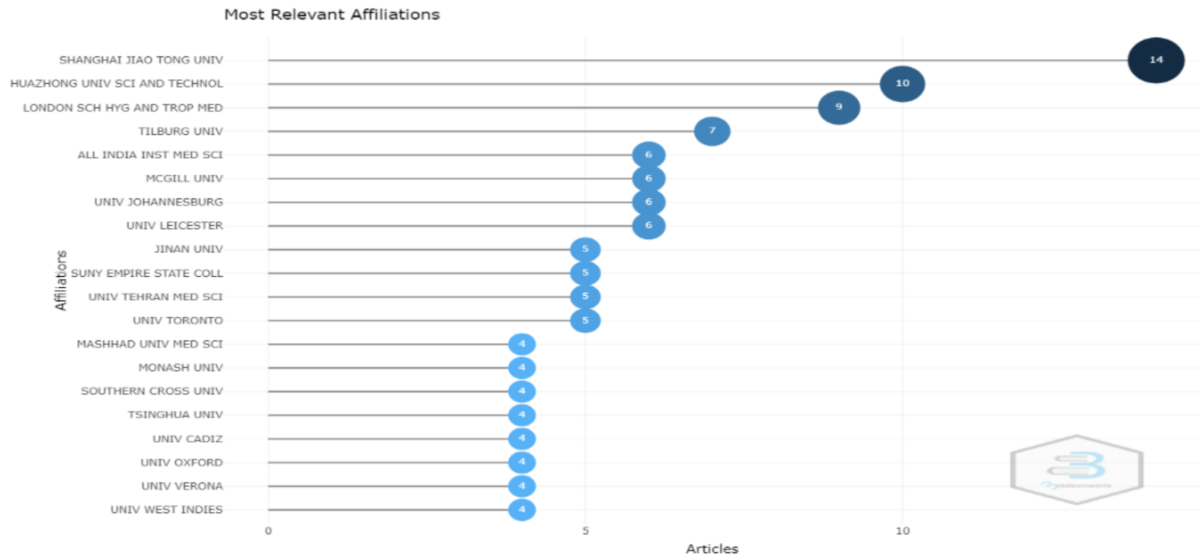
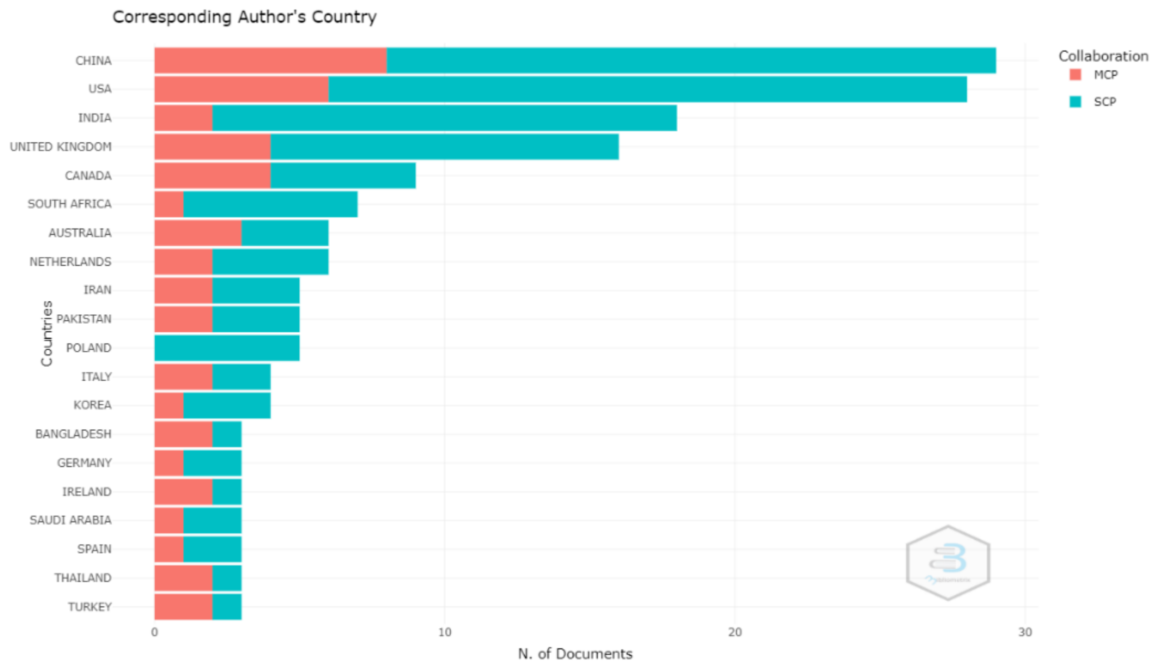



Figure 5 depicts Corresponding Author's Country. In this context, there are two types of articles: single country publications (SCP) with all authors from the same country and representing intra-country cooperation, and multiple country publications (MCP), whose authors are from different countries and representing inter-country cooperation.

**Figure 5: Corresponding Author's Country**




When examined the ranking made according to the MCP to article ratio (MCP Ratio) given in Table 4(a), it is seen that the 5 most productive countries are in the lower ranks. Interestingly, it can be seen that the most productive countries, such as China, USA, and India, where the MCP ratio is low, do not rank high in the ranking of citations per article. For example, USA, India and UK, which are the three countries with the highest number of citations, could not find a place in the top three in the ranking of citation rates per article. This situation can be expressed as a finding showing that international cooperation is important in increasing the number of citations per article (Sweileh et al., 2016). On the other hand, it can be stated that it would be beneficial to follow the studies from these three countries with the highest total citations in the studies conducted on the subject or in the decisions taken by policy makers.

**Table 4(a): Most Relevant Countries by Corresponding Author (b). Most Cited Countries**

| Country | Articles | Freq | SCP | MCP | MCP Ratio |
|---|---|---|---|---|---|
| **BANGLADESH** | 3 | 0,01463 | 1 | 2 | 0,667 |
| **IRELAND** | 3 | 0,01463 | 1 | 2 | 0,667 |
| **THAILAND** | 3 | 0,01463 | 1 | 2 | 0,667 |
| **TURKEY** | 3 | 0,01463 | 1 | 2 | 0,667 |
| **AUSTRALIA** | 6 | 0,02927 | 3 | 3 | 0,5 |
| **ITALY** | 4 | 0,01951 | 2 | 2 | 0,5 |
| **CANADA** | 9 | 0,0439 | 5 | 4 | 0,444 |
| **IRAN** | 5 | 0,02439 | 3 | 2 | 0,4 |
| **PAKISTAN** | 5 | 0,02439 | 3 | 2 | 0,4 |
| **NETHERLANDS** | 6 | 0,02927 | 4 | 2 | 0,333 |
| **GERMANY** | 3 | 0,01463 | 2 | 1 | 0,333 |
| **SAUDI ARABIA** | 3 | 0,01463 | 2 | 1 | 0,333 |
| **SPAIN** | 3 | 0,01463 | 2 | 1 | 0,333 |
| **CHINA** | 29 | 0,14146 | 21 | 8 | 0,276 |
| **UNITED KINGDOM** | 16 | 0,07805 | 12 | 4 | 0,25 |
| **KOREA** | 4 | 0,01951 | 3 | 1 | 0,25 |
| **USA** | 28 | 0,13659 | 22 | 6 | 0,214 |
| **SOUTH AFRICA** | 7 | 0,03415 | 6 | 1 | 0,143 |
| **INDIA** | 18 | 0,0878 | 16 | 2 | 0,111 |
| **POLAND** | 5 | 0,02439 | 5 | 0 | 0 |

(a)

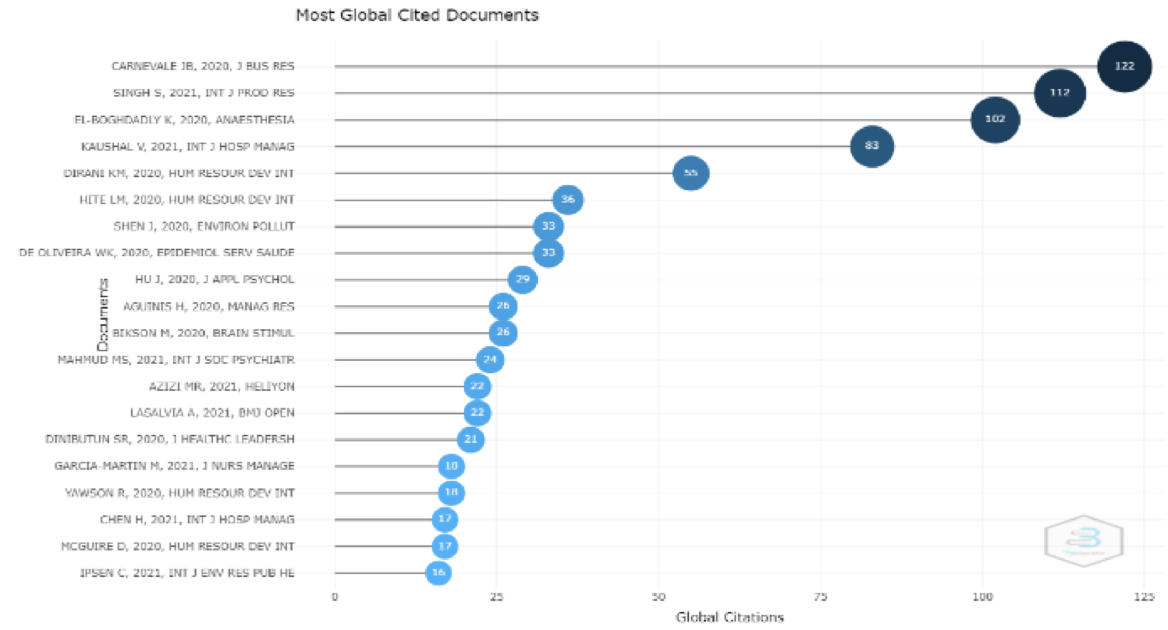
| Country | Total Citations | Average Article Citations |
|---|---|---|
| **BRAZIL** | 33 | 33 |
| **DENMARK** | 16 | 16 |
| **KUWAIT** | 29 | 14,5 |
| **INDIA** | **245** | 13,611 |
| **USA** | **328** | 11,714 |
| **BANGLADESH** | 34 | 11,333 |
| **UNITED KINGDOM** | **151** | 9,438 |
| **FRANCE** | 18 | 9 |
| **RUSSIA** | 8 | 8 |
| **SPAIN** | 23 | 7,667 |
| **IRAN** | 34 | 6,8 |
| **ITALY** | 22 | 5,5 |
| **THAILAND** | 16 | 5,333 |
| **INDONESIA** | 9 | 4,5 |
| **IRELAND** | 13 | 4,333 |
| **CHINA** | 119 | 4,103 |
| **CANADA** | 33 | 3,667 |
| **U ARAB EMIRATES** | 9 | 3 |
| **AUSTRALIA** | 15 | 2,5 |
| **NETHERLANDS** | 13 | 2,167 |

(b)

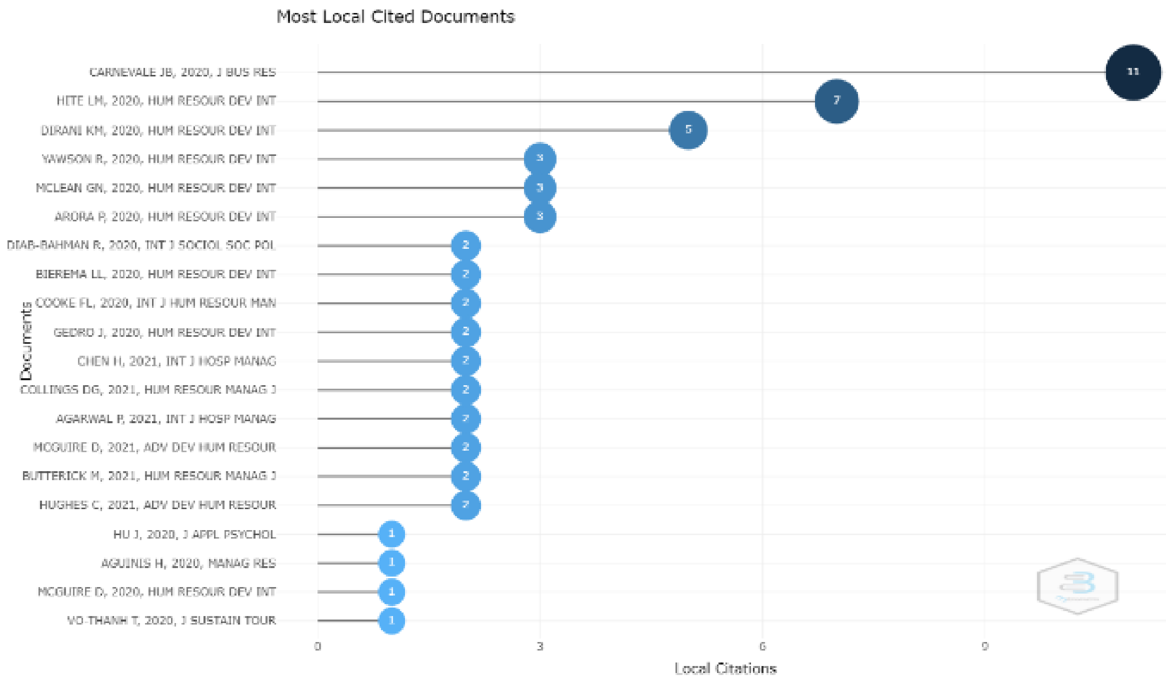
## 4.4. Documents

The most cited documents at global and local level are given in Figure 6(a) and Figure 6(b), respectively. It is seen that the most cited article is Carnevale JB 2020 receiving 122 citations globally. It is also observed that same study is cited 11 times locally by the 206 articles within analysis.

**Figure 6: (a). Most Global Cited Documents (b). Most Local Cited Documents**




(a)




(b)

The most frequently used words in the articles were analyzed at the level of KeyWord Plus, Titles, Author's Keyword and Abstracts. The data in KeyWords Plus is derived from words or phrases that used frequently in the titles of an article's references, but do not appear in the title of the article itself (Garfield, 1990). KeyWords Plus terms prove to be more valuable than author keywords for bibliometric mapping but are less deductive in the content analysis (Zhang et al., 2016). When Table 5 is examined, it is seen that the word "performance" is used 21 times in KeyWords Plus analysis unit, the word "COVID-19" is used 111 times in the Author's Keyword analysis unit. Additionally, the word "COVID" is used 176 times in the Titles analysis unit, and again the word "COVID" is used 570 times in the Abstracts analysis unit. When the most frequently used words are examined in the context of each analysis unit, it appears that those terms are related to both the COVID-19 pandemic and the policies of human resources.

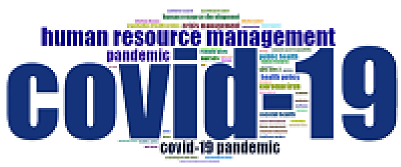
**Table 5: Most Frequent Words by Keyword Plus, Author's Keyword, Titles and Abstracts**

| Unit of Analysis | Words | Occurrences | Unit of Analysis | Words | Occurrences |
|---|---|---|---|---|---|
| **Keyword Plus** | performance | 21 | Titles | covid_ | 176 |
| | impact | 17 | | pandemic | 76 |
| | management | 16 | | human | 30 |
| | model | 12 | | management | 30 |
| | health | 11 | | study | 24 |
| | satisfaction | 11 | | resource | 21 |
| | leadership | 9 | | employees | 20 |
| | stress | 9 | | health | 19 |
| | mental-health | 7 | | impact | 17 |
| | resources | 7 | | healthcare | 15 |
| **Author's Keyword** | covid-19 | 111 | Abstract | covid_ | 570 |
| | human resource management | 23 | | pandemic | 366 |
| | covid-19 pandemic | 15 | | study | 254 |
| | pandemic | 15 | | health | 215 |
| | coronavirus | 8 | | human | 199 |
| | crisis management | 7 | | management | 188 |
| | health policy | 7 | | research | 157 |
| | public health | 7 | | employees | 152 |
| | human resource development | 6 | | resource | 147 |
| | mental health | 6 | | workers | 109 |

The most frequently used words in the articles are visualized in Figure 7 through word cloud graphics. The words written in large fonts in the images indicate the frequency of use. The larger the font size a word is, the more frequently it is used.

**Figure 7: Word Analysis of (a) Keyword Plus, (b) Author's Keyword, (c) Titles and (d) Abstracts**


(a)




(b)

(c)

(d)

### 4.5. Conceptual Structure

The thematic evolution of the field showed the main changes in the Keywords Plus is presented in Figure 8. Research themes are categorized under four groups with regard to thematic evolution: i) Motor themes at a high centrality and intensity level. This section contains highly evolving key themes for the research field. ii) Basic and transversal themes at a high centrality and low development level. The themes in this section tend to become motor themes in the future due to their high centrality level. iii) Emerging or declining themes at a low centrality and intensity level. Qualitative analysis is needed to determine whether the themes in this section are emerging or declining. iv) Highly developed and isolated themes with low centrality and high development level. Themes in this area are no longer important because of a new concept or technology (Cobo et al., 2012).

With reference to that concept, it is seen that the theme composed of performance employee and future is the most studied among the motor themes with highest centrality and density. Also, the theme composed of impact, crisis and lessons is among the motor themes with second-level centrality and density. In the lower right part of the thematic map, there are themes with a high degree of centrality but with a low degree of intensity. In other words, it can be said that although they are in the center of the field, there are themes that are likely to become motor themes when more publications are made. Those are the theme composed of health, satisfaction and perceptions and the theme composed of stress, challenges and job. It is noteworthy that the themes management, anxiety and care are studied as a niche theme. And the theme gender intersectionality needs to be analyzed qualitatively about whether it is emerging or declining.

**Figure 8: Thematic Evolution Map (Keywords Plus)**

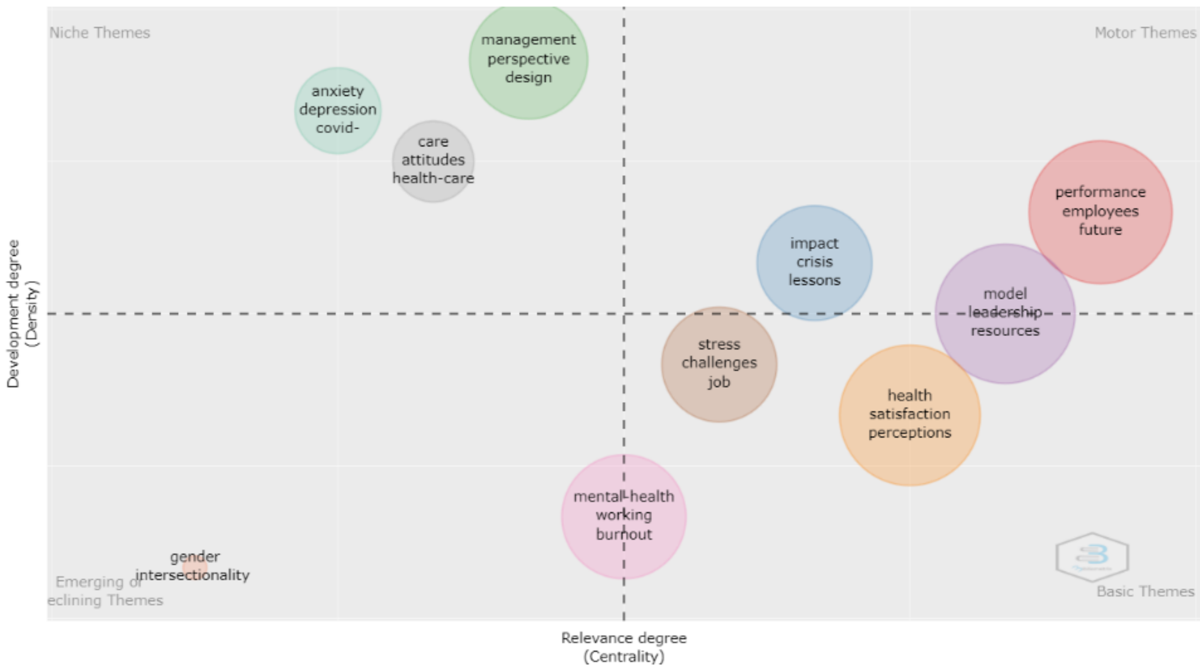


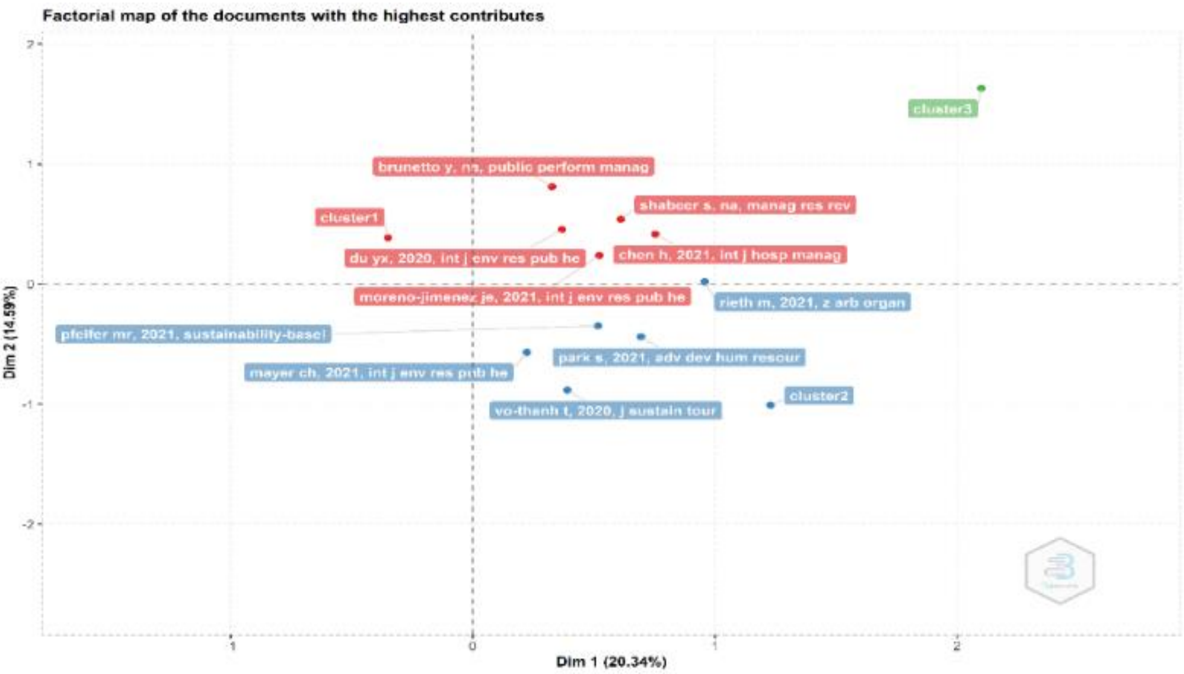
Figure 9 depicts the factorial map of the documents with the highest contribution. Brunetto et al. (2021), one of the authors included in the red cluster in Figure 9, discussed the issues of psychosocial security environment, psychological capital and innovative behavior in COVID-19 Pandemic. They made reference to that COVID-19 changed the working lives of employees, that innovative behavior contributed to the success in this period, that the psychosocial safety climate took part in the personal psychological coping, performance, and well-being and innovation of the employees. In the study of Shabeer et al. (2021) the subject of managing the career plateau in COVID-19 was referred. Du & Liu (2020) examined the effect of psychological contract on employee safety behaviors against COVID-19. In the study conducted by H. Chen & Eyoun (2021) the relationships between employees' fear of COVID-19, job insecurity, and emotional burnout were investigated. Moreno-Jiménez et al. (2021) addressed the stress experienced by healthcare professionals during COVID-19 period.

*The authors included in the red cluster in Figure 9 dwelled on the employees' fear of COVID-19, job security, psychological problems experienced by employees, etc.*

Rieth & Hagemann (2021), one of the authors included in the blue cluster in Figure 9, investigated the effect of teleworking and closures of schools and nurseries on employees during COVID-19 Pandemic. According to the findings, it is understood that people who do not work from home experience more stress and less life satisfaction than those who work from home. In addition, teleworking is beneficial if the working conditions are supportive, otherwise it could be very compelling to work from home, especially because of the children who stay at home. Pfeifer (2021) investigated the effects of quarantine practices and phases outside the quarantine on managers and employees during COVID-19 Pandemic period. As a result of the research, it is observed that managers in general and especially those with telecommunications experience adapt better to working from home during the quarantine period. In the study of Mayer et al. (2021) the stress and positive psychological perspective of managers with the aim of adapting to the new business world that changed along with COVID-19 and coping with the problems experienced was discussed. Park et al. (2021), on the other hand, focused on the psychological well-being and career development of those teleworking during COVID-19 Pandemic.

*It is seen that the authors included in the blue cluster in Figure 9 especially emphasized the issue of teleworking, discussed the challenges of teleworking and its effects on the psychology of the employees.*

**Figure 9: Most Contributing Documents Map (Keywords Plus)**




The factorial map of the most cited articles is given in Figure 10. Carnevale & Hatak (2020), one of the authors included in the red cluster of this map, examined the effects of COVID-19 on the changing work pattern of HRM. They dwelled on the difficulties experienced by employees in teleworking, the opportunities brought by the pandemic, and the adaptation of employees to the pandemic and their welfare. Hite & McDonald (2020) focused on the post-pandemic period. These authors discussed the changes and challenges that would be experienced by employees in their careers post-pandemic period. Career,

career shock, uncertainties, resilience and sustainable career and career opportunities, etc. were emphasized. They also discussed the role of HRM in this process. Dirani et al. (2020) explored the functions of leaders and organizations in COVID-19 and broadly evaluated the new roles assumed by Human Resources Development during COVID-19 Pandemic.

Bhumika (2020), one of the authors included in the blue cluster in Figure 10, investigated the relationship between work-life balance and emotional burnout experienced by individuals teleworking during quarantine periods in COVID-19 Pandemic. According to the findings, it was revealed that women experienced more emotional burnout compared to men because they were not able to maintain their work-life balance during telework period. Moreover, it is determined that participatory leadership will be effective in maintaining the balance between work and private life and that the emotional burnout experienced by employees may be reduced to some extent thanks to this effect. Mayer et al. (2021) discussed the stress and positive psychological perspective of managers with the aim of adapting to the new business world that changed along with COVID-19 and coping with the problems experienced. Pfeifer (2021) investigated the effects of quarantine practices and phases outside the quarantine on managers and employees during COVID-19 Pandemic period. As a result of the research, it is observed that managers in general and especially those with telecommunications experience adapt better to working from home during the quarantine period. Park et al. (2021) focused on the psychological well-being and career development of those teleworking during COVID-19 Pandemic. Researchers suggested that HRD professionals could support the psychological health and career development of those teleworking during COVID-19 Pandemic.

**Figure 10: Most Cited Documents Map (Keywords Plus)**

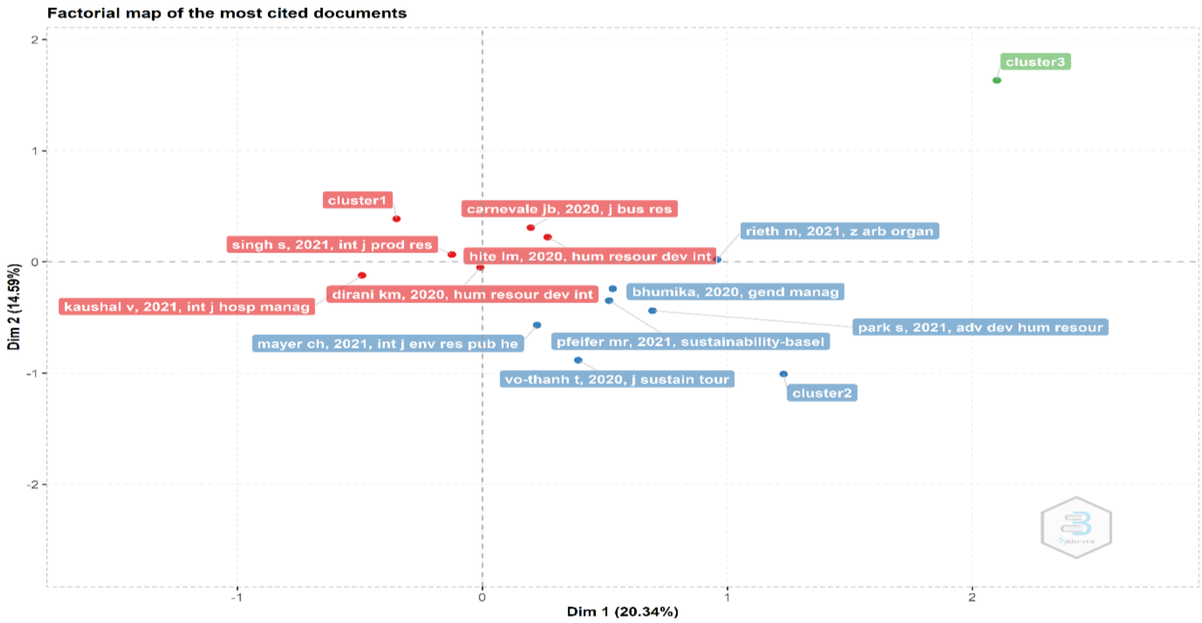
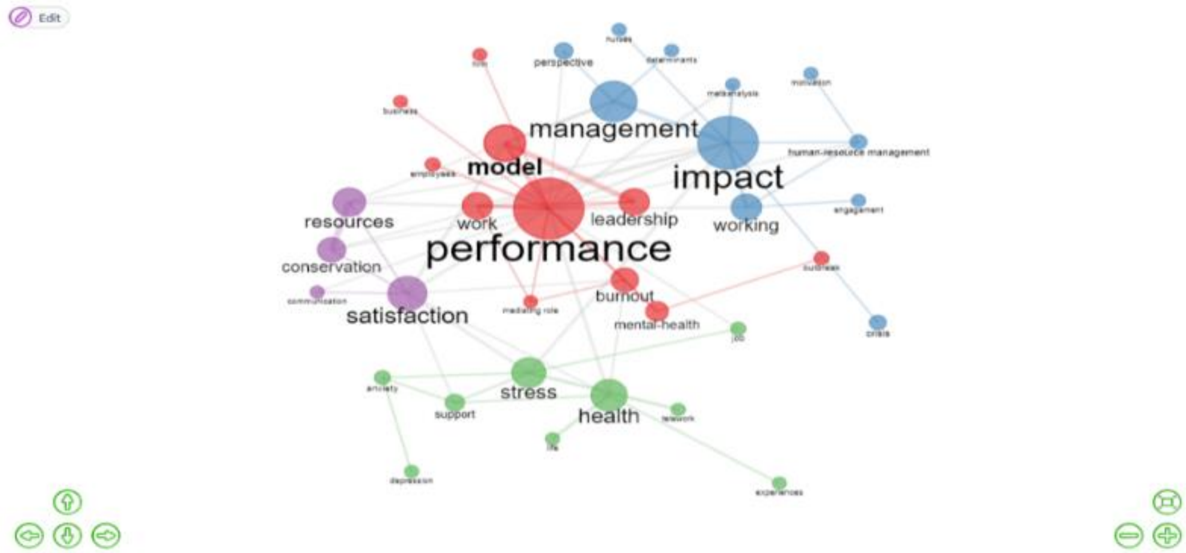



Figure 11 depicts the co-occurrence network by Keywords Plus. The purpose of co-occurrence network analysis is to access the relations of items based on the number of documents in which they occur together. According to analysis, it is seen that the words are gathered under four main cluster.  Red cluster that can be characterized as performance cluster and blue cluster that can be characterized as impact cluster are the two of the biggest of them. Also, the minor clusters are green cluster which can be characterized as health and purple cluster can be characterized as satisfaction.

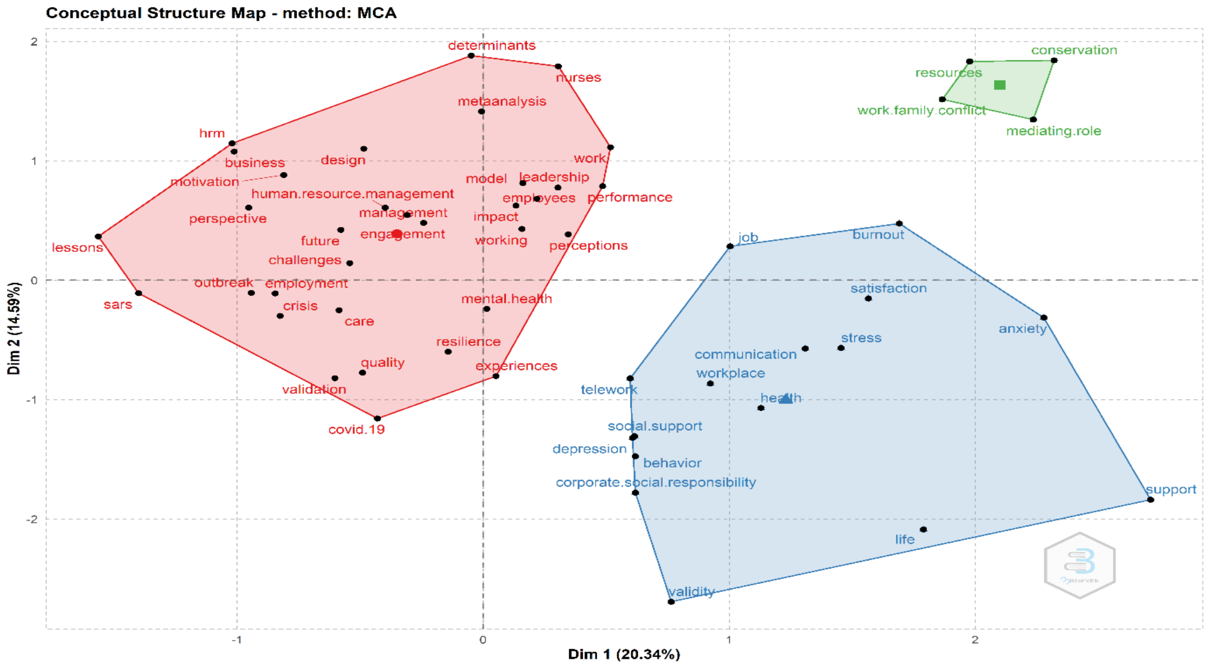
**Figure 11: Co-occurrence Network (Keywords Plus) Analysis**




Conceptual structural map, given in Figure 12, depicts three different compositions shown in blue, red, and green colors. It is observed that the red cluster involves concepts such as HRM, COVID-19, leadership, employees, motivation, management, future, challenges, employment, mental health and resilience. This cluster can be referred to as the mental health zone. This zone points at the problems experienced by healthcare professionals, especially in the early stages of COVID-19 Pandemic, and the psychological problems developed due to these problems. HRM departments undertook an important role in solving the problems experienced by healthcare professionals and other employees.

In the blue cluster, concepts such as telework, job, burnout, satisfaction, stress, anxiety, communication, workplace, health, depression, behavior and support are seen. This cluster can be named as the telework cluster. In this cluster, it is observed that problems such as stress, anxiety, depression, burnout and communication experienced by employees due to telework stand out. HRM departments assumed important tasks in solving these problems experienced by employees while teleworking and in maintaining the works remotely. At this point, HRM departments also functioned as a bridge so that communication between employees and managers could be provided. In the green cluster, concepts such as resources, conservation, and work-family conflict stand out.

**Figure 12: Factorial Analysis (Keywords Plus) (Conceptual Structural Map, Method: MCA)**




## 4.6. Intellectual Structure

Co-citation network is given in Figure 13. The relative size of the nodes connotates the centrality of each respective author. Size of that node increases as per to the number of other authors co-cited with that author in question. A large node also indicates that the author's works play a major role for the topical orientation of the cluster.

Co-citation network comes under four cluster. Red cluster is the biggest one and then blue, green and purple appears respectively. Q. Chen et al. (2020), one of the authors included in the red cluster in this figure, studied on the mental health of healthcare professionals in China during COVID-19 Pandemic. Kang, Ma, et al. (2020) explored the mental health status of healthcare professionals during COVID-19 Pandemic. Kang, Li, et al. (2020) examined the mental health of healthcare professionals dealing with the novel coronavirus in Wuhan, China. Lai et al. (2020) studied the mental health of healthcare professionals exposed to coronavirus disease. Liu et al. (2020) reviewed the experiences of healthcare professionals during COVID-19 crisis in China. Pappa et al. (2020), on the other hand, investigated the issues of depression, anxiety and insomnia among healthcare professionals during COVID-19 Pandemic.

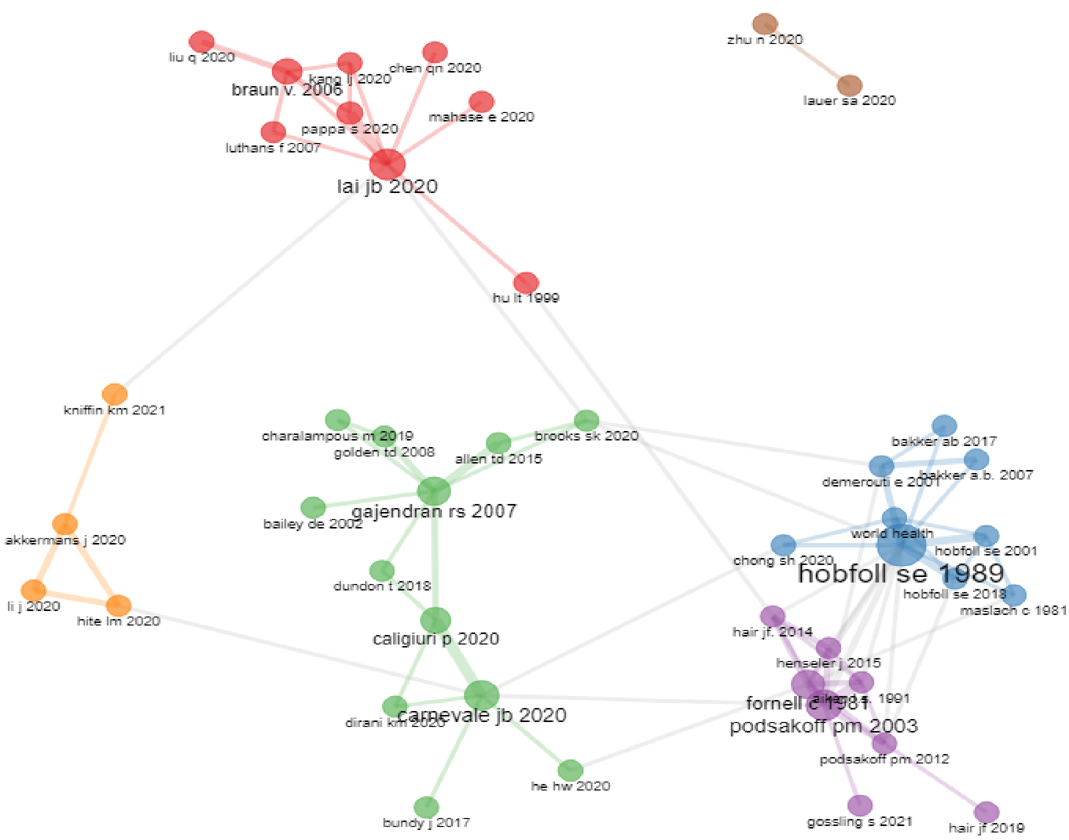
*It is understood that the authors included in the red cluster in Figure 13 dwell on the problems experienced by healthcare professionals and their psychological effects.*

Zhu et al. (2020), one of the authors in the Brown cluster in Figure 13, examined the emergence and early spread of the Coronavirus in Wuhan, China. Akkermans et al. (2020), one of the authors in the orange cluster in Figure 13, assessed COVID-19 Pandemic as a career shock. The effects of COVID-19 Pandemic on career and occupational behaviors were studied. Hite & McDonald (2020) focused on the post-pandemic period. They reviewed the changes and challenges that would be experienced by employees in their careers post-pandemic period. Also, the role of HRM in this process was discussed. With regard to the subject of career; career shock, uncertainties, resilience and sustainable career and career opportunities, etc. were emphasized. Kniffin et al. (2021) broadly addressed the effects of COVID-19 on workers and workplaces around the world. The emphasis is on: (a) abrupt changes in ways of doing business (e.g., telework, virtual teamwork) and (b) abrupt changes for workers (e.g., social distancing, stress and unemployment) caused by COVID-19 Pandemic.

*It is observed that the authors included in the orange cluster in Figure 13 mostly focus on the impact of COVID-19 Pandemic on the careers of the employees.*

Brooks et al. (2020), one of the authors in the green cluster in Figure 13, dwelled on the psychological effects of quarantine. As a result of their research, it is determined that quarantine has negative psychological effects such as stress, confusion and anger. Caligiuri et al. (2020) focused on international human resources management (IHRM) in order to address the challenges of COVID-19 Pandemic. Telework, career issues and cross-border distance problems are mentioned. In addition, the challenges posed by distance in terms of employee selection, training, support, health and safety, leadership and virtual collaboration are emphasized as well. Chong et al. (2020), one of the authors included in the blue cluster in Figure 13, discussed the issue of COVID-19 and teleworking.

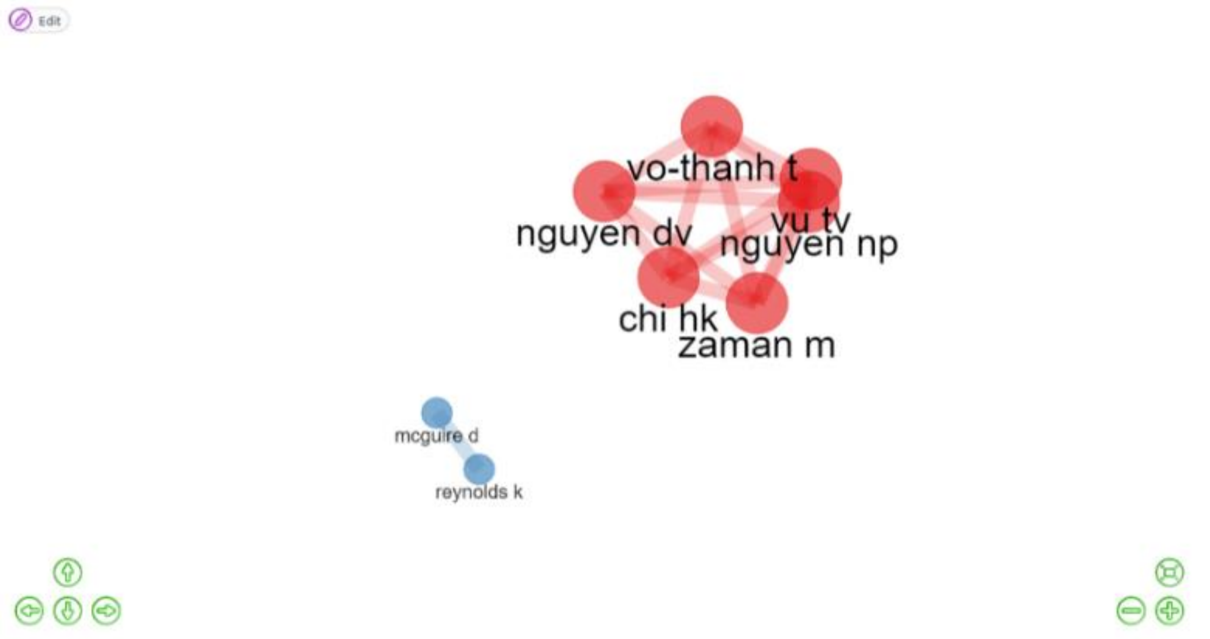
**Figure 13: Co-citation Network**




## 4.7. Social Structure

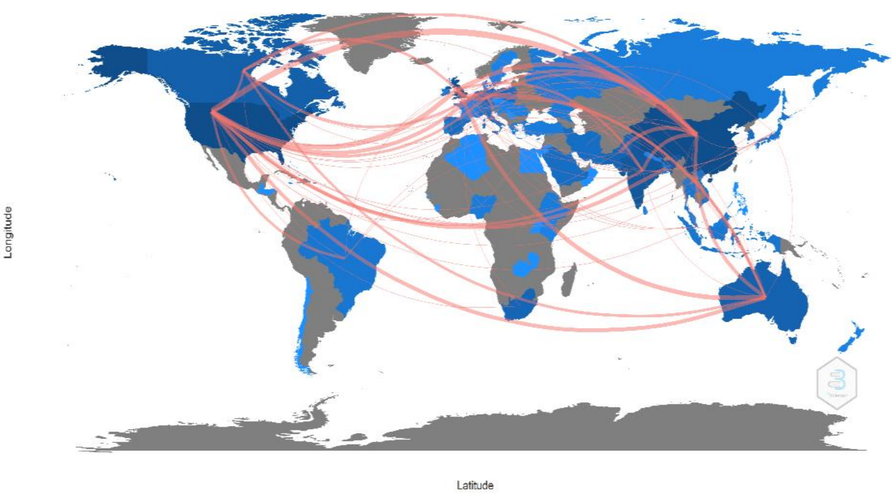
Figure 14 depicts the collaboration network of authors The red cluster is the densest at the point of cooperation. Because it is seen that there is more interaction between them. Then the blue cluster, and the green cluster can be seen as the most cooperating clusters in themselves. McGuire et al. (2020), one of the authors shown in the blue cluster in Figure 14, assessed the COVID-19 Pandemic as a crisis and reviewed the leadership and communication skills of the leader in the management of this crisis. They claimed that positive and consistent communication inspires trust and social solidarity upon emphasizing the importance of communication in crisis management. McGuire et al. (2021) underlined that ethical values should be taken into account while reshaping HRD in the light of the COVID-19 Pandemic.

**Figure 14: Collaboration Network**




The international research collaboration regarding original studies of the field is given in Figure 15. The density of the blue color indicates to the number of published articles. And the thickness of the red line indicates the multitude of the collaboration based on frequency. According to Figure 15, it is inferred that USA, China, England, Australia and Canada collaborated mostly.

**Figure 15: Country Collaboration Map**




## 5. CONCLUSION AND IMPLICATIONS

Shortly after COVID-19 was first reported in December 2019 in Wuhan City, Hubei Province of China, it spreads all over the world and turned into a pandemic (Yawson, 2020: 406). COVID-19 Pandemic deeply influenced all economies and businesses. Significant changes also occurred in the duties and roles of HRM along with the pandemic. For instance, HRM departments had to regulate changing business conditions and ensure that employees adapt to these conditions (İlhan, 2020: 294). Within the scope of this research, which was carried out to determine the course of HRM research during pandemic, bibliometric analysis methodology was implemented.

As a result of the research conducted, it is observed that 206 publications covering the subjects of pandemic and HRM were made between 2020-2021. These publications were included in 139 sources (journals, books, etc.), the publications belonged 1004 authors, the citation rate per article was 6.019 and the collaboration index of authors was quite high (5.72). Since the collaboration index of the authors is high, it is identified as a suitable area for the collaborative works of the authors. It is understood that the number of articles, which was 49 in 2020, increased to 128 in 2021, and the interest in this subject has grown significantly. According to the result from the Sankey diagram it is observed that the main concepts such as telework, burnout, career development and change management, as well as crisis management, health policy, organization of health services, public health, mental health, etc. come to the fore due to COVID-19. These concepts are also among the most discussed issues in terms of HRM during COVID-19 Pandemic period.

It is found that the journal that published the most articles on HRM during the pandemic period was BMJ Open and that the most relevant institution on the subject was Shanghai Jiao Tong University with 14 articles. It is understood that although the countries that published the most articles were China, USA and India, respectively, the countries with the highest number of citations per article were Brazil, Denmark and Kuwait. It can be claimed that it would be instrumental to keep track of the countries that made the most publications and received the most citations per article for the follow-up of the HRM studies conducted during the pandemic period.

It is observed that the most cited article worldwide is Carnevale JB 2020 with 122 citations. In the said study, the changing work pattern of HRM due to COVID-19, the challenges faced by employees during telework, the opportunities brought by the pandemic, and the adaptation of employees to the pandemic and their welfare are emphasized.

Analyzing the words most frequently used by the authors, it is seen that the terms of covid, pandemic, human, management, study, resource, employees, health, impact and healthcare are mostly preferred in the titles of the articles. On the other hand, looking at the author's keyword analysis, it is observed that the most commonly used terms are covid-19, human resource management, covid-19 pandemic, pandemic, coronavirus, crisis, management, health policy, public health, human resource development and mental health. When examining most frequently used words by the authors within the scope of this analysis, it is understood that these terms are related to both the COVID-19 pandemic and human resources.

When analyzing the factorial map of the documents with the highest contribution to the conceptual structure, it is seen that the authors in the red cluster focused on employees' fear of COVID-19, job security, psychological problems experienced by employees, etc. It is observed that the authors in the blue cluster especially emphasize the issue of teleworking, and discuss the challenges of teleworking and its effects on the psychology of the employees. When the factorial map of the most cited documents is analyzed, the effects of HRM on the changing working pattern, career and leadership issues are discussed in the red cluster. On the other hand, work-life balance and psychological problems related to teleworking are emphasized in the blue cluster. In the study conducted by Mahmud et al. (2021), it was revealed that fear of COVID-19 has a direct impact on the career anxiety of the future workforce.

According to the conceptual structural map, the red cluster contains words such as HRM, COVID-19, leadership, employees, HRM, motivation, management, while, terms such as telework, job, burnout, satisfaction, stress, anxiety, communication stand out in the blue cluster. Red cluster points at the problems experienced by healthcare professionals, especially in the early stages of COVID-19 Pandemic, and the psychological problems developed due to these problems. The blue cluster indicates the problems experienced by employees while teleworking, and the fact that HRM departments assumed important duties in solving these problems and maintaining the work remotely. According to Carnevale & Hatak (2020), employees who previously spent all or most of their time working within the physical confines of their workplaces now needed to quickly adapt to teleworking environments. At this point, HRM departments also functioned as a bridge to ensure communication between employees and managers.

When the co-citation network is analyzed, it is seen that the authors in the red cluster focus on the problems experienced by healthcare professionals and their psychological effects; that the authors in the brown cluster examined the emergence and early spread of the corona virus in Wuhan, China; that the authors in the orange cluster dwell on the impact of COVID-19 Pandemic on the careers of employees; that the authors in the green cluster focused on the psychological impact of quarantine and international human resources management (IHRM); and that the authors in the blue cluster address the issue of COVID-19 and telework. Each cluster in the co-citation network appears to represent many of the HRM issues during the pandemic.

Examining the Country Collaboration Map, it is inferred that the most collaboration is between the USA, England, China, Australia and Canada. It can be claimed that increasing the collaboration between countries would contribute to the emergence of publications in greater number and quality.

In conclusion of this study, which was conducted in order to determine the course of HRM studies during COVID-19 Pandemic, it was observed that in the early days of the pandemic, employees experienced anxiety, stress, burnout, etc., due to fear of

COVID-19, and consequently research studies mostly focused on these aspects. Then, it was understood that most of the employees had to work remotely with the quarantine practices, and as a result, important problems were faced by both employees and businesses. Employees were forced to experience psychological problems due to isolation and at the same time had difficulties in maintaining home-work balance. However, it is seen that businesses dealt with concerns such as ensuring the motivation of employees and preventing performance declines. At this point, it can be argued that the HRM departments of the businesses assume important duties. One of the issues that employees are most concerned about during COVID-19 Pandemic is career advancement. Some of the studies also focuses on this issue. It can be claimed that among the issues to be discussed most in terms of HRM after the pandemic, would be telework, performance improvement, career advancement, maintaining the well-being of employees, etc.

There are some limitations to the research conducted. Carrying out the research using a single database (Web of Science) constitutes the most important limitation for the research. In future studies, more studies can be reached by exploring on more databases. Another limitation of the research is the determination of the time interval as 2020-2021. If future studies are conducted to the extent covering the year of 2022, in which the pandemic perseveres, it will be possible to ccess more data.

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# INTRAPRENEURSHIP OF SOFTWARE DEVELOPERS IN YANGON, MYANMAR

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## ABSTRACT
**Purpose-** The purpose of this study is to explore the intrapreneurial behavior and innovative performance of software developers in Yangon. The specific objectives of this paper are first o examine the effect of individual factors on intrapreneur behavior of software developers in Yangon, and second to investigate the effect of internal organizational factors on intrapreneur behavior of software developers in Yangon, and third to analyze the effect of intrapreneur behavior on innovative performance of software developers in Yangon.
**Methodology-** This study is conducted based on the survey with 120 software developers from 30 software houses in Yangon. A structured questionnaire is used to collect the primary data for this study. Simple random sampling method was used in this study.
**Findings-** The findings of this study are individual motive, organization culture, resource availability and rewards & recognition are key determinants for software developer's intrapreneurial behavior. In addition, pro-activeness behavior among of intrapreneurial behavior have positively significant relationship with innovative performance of software developers. And also, intrapreneur behavior were positively significant effect on innovative performance of software developers in Yangon.
**Conclusion-** This study concluded that institutionalizing intrapreneurial behavior is a response strategy of adding value to ICT innovation, empowering individual employees and leading the organizations to become more competitive in market.

**Keywords:** Intrapreneurial behavior, innovative performance, motive, resource availability
**JEL Codes:** M40, M41

## 1. INTRODUCTION

Intrapreneuriship pathways are needed to achieve excellence for software companies. One of these methods is to give employees a space in which to engage in intrapreneurial work, extract intrapreneiurial ideas from them, and exploit intrapreneurial staff for the benefit of the organization (Phogat, S. 2016; Minh & Thanh, 2020). Intrapreneurship or corporate entrepreneurship was initiated by Susbauer in 1973 with an understanding of entrepreneurship within the organization. Employees are the critical sources to enhance the innovation process of organizations.

In the workplace, some individuals engage in generation, promotion, and realization of new ideas for the benefit of individual performance, group effectiveness, or organizations. The previous literary works classifies this phenomenon as innovative behavior. Organizations need to nurture the entrepreneurial employees for their organizational innovative performance. Innovation has become a mantra for organizations in almost every industry and for individuals working in almost every organizational function. Within the software development industry, the pace of technological change fosters a particular sense of urgency surrounding the need to innovate. Thus, software developers need to be more take the risk, pro-activeness and make the innovative product in market.

The specific objectives of this study are to determine the intrapreneurial behaviour of software developers in Yangon, investigate the influencing individual factors and internal organizational factors on intrapreneurial behaviour of software developers in Yangon and examine the influence of intrapreneurial behaviour on innovative performance of software developers in Yangon

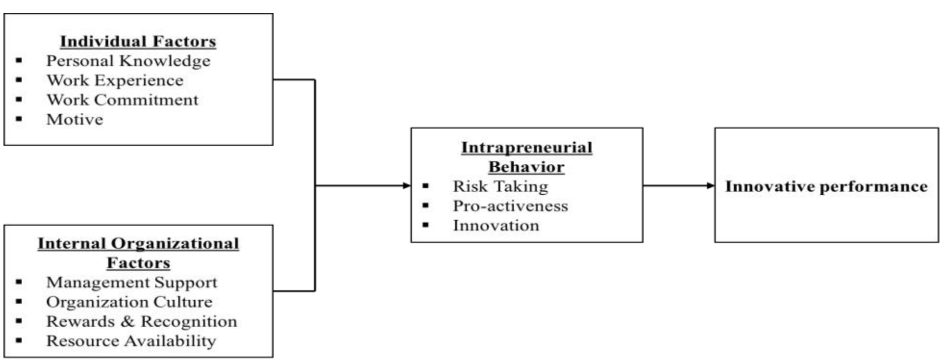
## 2. LITERATURE REVIEW

Intrapreneurship or Corporate entrepreneurship was initiated by Susbauer in 1973 with an understanding of entrepreneurship within the organization. In broad definition, intrapreneurial behavior is described as entrepreneurship within an existing organization (Antoncic, 2007). There are many determinants for intrapreneurial behavior and innovative performance. This research reveals the individual factors and internal organizational factors as major determinant factors. Most of the researchers argued that individual characteristics are to be critical for shaping their intrapreneurial behavior. The following personal characteristics could take account as the individual factor for shaping the intrapreneurial behavior. There is personal knowledge, work experience, work commitment and motive. Knowledge derived from prior experiences improves the recognition of opportunities (Wang et.al 2013). Personal knowledge, classified as knowledge derived from education and training, is related with the probability of becoming an intrapreneurial. Previous working experience can provide the employee with expertise in running an independent venture. Urbano et al. (2013), pointed out that employees having previous entrepreneurial experience increased probability of becoming an intrapreneur. Work commitment refers to the employee's emotional attachment to, identification with, and involvement in a particular organization. Organizational commitment has captured researchers' attention after Allen & Meyer's (1990) three component model structure. According to Naffziger, Hornsby, & Kuratko (1994), the performance of individuals is influenced by its intrinsic nature and at the same time, it reflects their internal stimuli, i.e., their needs, attitudes and values.

The success of the intrapreneur also depends on the organizational context. The organization can facilitate or inhibit the actions of the intrapreneur. Hornsby et al., (1999) said that there are five organizational internal factors that can support the employee's intrapreneurial behavior, namely: management support, organizational cultural, resource availability and rewards and recognition. (Hornsby et al., 1993). Management support refers to the willingness of the top management to facilitate, encourage and promote intrapreneurial efforts in an existing organization (Alpkan et. al., 2010). Organization culture could be referred to as a glue that holds the members together (Sepra, 1985) and was defined as values, habits, norms that govern the behavior of the employee (Hasanoğlu, 2004). Rewards and reinforcement developed the motivation of intrapreneurs to engage in innovative, proactive and moderate risk-taking behavior (Goosen, 2002). Innovative organizations are characterized by providing rewards based on performance. In order to foster innovative behavior, organization must evaluate the workloads of the employees to ensure that the workforce have the time needed to pursue innovation (Kuratko, Ireland et al., 2008).

Intrapreneurship was supposed to contain an element of innovation. Innovation refers to the production, adoption and implementation of useful ideas, including the adaptation of products or processes from outside an organization (Kanter, 1988; Van de Ven, 1986). This identification is common to all types of innovation such as product innovation, process innovation, marketing innovation, and so on. The most common types of innovation by general conceptualizing are product innovation and process innovation. After reviewing the previous literature, this conceptual framework developed for this study.

**Illustration 1: Conceptual Framework of the Study**




## 3. DATA AND METHODOLOGY

### 3.1. Research Design

This study focuses on the intrapreneurial behavior and innovative performance of software developers in Yangon. In order to determine the sample size of this study, two stages sampling method are used in this study. In the first stage, there are selected

30 percent of ICT companies that are registered in Yangon Region Computer Federations. In the second stage, sample size are selected from the 600 numbers of software developers in Yangon. Due to time limitations for this study, 120 software developers are contacted and analyzed by taking 8% error percentage rate and 97% response rate. The data collection period is during May to July 2019. Both primary and secondary data are used in this study. A structured questionnaire is used to collect primary data from software developers at software companies in Yangon. Secondary data is extracted from related website, publication and previous research paper. This study analyzes the intrapreneurial behavior and innovative performance of software developers at ICT Companies in Yangon Region. The respondents of this study are only software developers who are currently working at Software Houses in Yangon region. Depending on the limitation of time and effort for the study, this study focused on Software companies that registered in Yangon Region Computer Industry Association (Yangon RCIA).

### 3.2. Data Analysis

There are four components for this section. The first one is reliability analysis, the second one is descriptive analysis of intrapreneurial behavior, third is regression analysis of relationship between individual factors, international organizational factors and intrapreneurial behavior of software developers and the last one is relationship between intrapreneurial behavior and innovative performance of software developers.

### 3.2.1. Reliability Analysis

The reliability of questionnaire is tested with the Cronbach's alpha coefficient. Cronbach's alpha coefficient measures the degree of dependability, consistency or stability of a scale. In this study, the reliability coefficients of eight variables are tested and the results are shown in Table (1).

**Table 1: Reliability Analysis**

| Variables | Cronbach Alpha | Questionnaire Items |
|---|---|---|
| Personal Knowledge | 0.757 | 5 |
| Work experience | 0.809 | 5 |
| Work commitment | 0.838 | 5 |
| Motive | 0.845 | 5 |
| Management Support | 0.909 | 5 |
| Organization Culture | 0.762 | 5 |
| Reward & Recognition | 0.912 | 5 |
| Resource Availability | 0.842 | 5 |
| Risk Taking | 0.894 | 5 |
| Pro-activeness | 0.857 | 5 |
| Innovation | 0.795 | 5 |
| Innovative Performance | 0.867 | 5 |

Source: Survey Data,2020
Note: Questionnaire item

According to Sekaran and Bougie (2016), Cronbach's alpha coefficient values over 0.7 are acceptable and over 0.80 are good for the reliability of questionnaire Table (1) indicates that the alpha values of all variables are greater than 0.50. Therefore, the variables in the questionnaire are reliable enough for analysis of the study.

### 3.2.2. Intrapreneurial Behavior of Software Developers in Yangon

Nature of ICT companies' operations focus on the innovative feature about their product and process. Having the intrapreneurial employee can encourage the organization's innovative performance. There are fifteen questions used to investigate the intrapreneurial behavior of software developers in Yangon. The data are collected from 120 software developers from ICT companies that are listed in Yangon Computer Industrial Association. The results are shown in the following Table. In this section consists of three components – risk taking, pro-activeness and innovation. The overall mean value of the intrapreneurial behavior was presented in Table (2).

**Table 2: Intrapreneurial Behavior of Software Developers**

| No. | Statements | Mean Value | Standard Deviation |
|---|---|---|---|
| | **Risk Taking** | | |
| 1 | Making the large, bold decisions despite uncertainty. | 3.21 | 0.75 |
| 2 | Taking risks support to seizing and exploiting new opportunities. | 3.66 | 0.84 |
| 3 | Making the out of box thinking | 3.53 | 0.98 |
| 4 | Taking higher risk making the higher return | 3.70 | 0.91 |
| 5 | Making creative thought and own methods | 3.92 | 0.79 |
| | **Mean Value of Risk Taking** | **3.60** | **0.72** |
| | **Pro-activeness** | | |
| 1 | Making the difference way in organization | 3.41 | 0.79 |
| 2 | Looking for better ways to do things | 3.68 | 0.67 |
| 3 | Challenging the status- quo | 3.69 | 0.68 |
| 4 | Serving the different need of different people | 3.71 | 0.71 |
| 5 | Quick response to the advice of peers | 3.74 | 0.72 |
| | **Mean Value of Pro-activeness** | **3.65** | 0.574 |
| | **Innovation** | | |
| 1 | Making the different process than traditional ones. | 3.83 | 0.66 |
| 2 | Having the sufficient resources for innovation | 3.68 | 0.67 |
| 4 | Finding the new solutions for problems | 3.85 | 0.63 |
| 5 | Being innovation the most important factor for organization | 3.91 | 0.64 |
| | **Mean Value of Innovation** | **3.80** | 0.490 |

Source: Survey Data, 2020

According to this table, there are three dimensions for software developer's intrapreneurial behaviour. Among of these dimensions, innovation is the highest mean value. It indicates the software developer's innovations power can support to nurture their intrapreneurial behaviour.

### 3.2.3. Effect of Individual Factors and Internal Organizational Factors on Intrapreneurial Behavior of Software Developers

Multiple regression analysis is used to test the effect of independent variables (individual factors and internal organizational factors) on dependent variable (intrapreneurial behavior). The results of the analysis are shown in Table 3. According to this analysis, individual motive is the key driver for enhancing intrapreneurial behavior. Individual achievement, passion and employee's motive can encourage their intrapreneurial behavior. Most ofthe software developers are male who possess the highest achievement level and there was no hesitate to take the risk make the innovative product in their works. In addition, there personal knowledge is another key determinants factor for exploring their intrapreneurial behavior.

**Table 3: Effect of Individual Factors and Internal Organizational Factors on Intrapreneurial Behavior**

| **Model 1** | **B** | **Std. Error** | **Sig** | **Model 2** | **B** | **Std. Error** | **Sig** |
|---|---|---|---|---|---|---|---|
| (Constant) Intrapreneurial behavior | .275 | .366 | .453 | (Constant) Intrapreneurial Behavior | .328 | .281 | .247 |
| Personal Knowledge | .230** | .100 | .023 | Management Support | .134** | .066 | .044 |
| Work Experience | .088 | .091 | .339 | Organization Culture | .172** | .148 | .045 |
| Work Commitment | .068 | .060 | .256 | Reward &Recognition | .130** | .064 | .044 |
| Motive | .538*** | .079 | .000 | Resource Availability | .487*** | .080 | .000 |
| R Square = .472<br>Adjusted R Square = .453<br>F Value = 25.672***<br>Durbin Waston = 2.198 | | | | R Square = .605<br>Adjusted R Square = .592<br>F Value = 44.048***<br>Durbin Waston = 2.042 | | | |

Source : Survey Data,2020

Software developer's pro-activeness behavior is based on their organization's resource availability. If the software developers' have sufficient time and budget that can lead to improve intrapreneurial behavior within the organization. Employee's intrapreneurial mindset can push to create innovation ones within their organization. According to this analysis, organizations are the key critical factors for enhancing employee's intrapreneurial mindset because all of these international organizational factors are moderately significant relationship with intrapreneurial behavior of software developers.

### 3.2.4. Effect of Intrapreneurial Behavior on Innovative Performance

This study analyzes the effect of intrapreneurial behavior on innovative performance. The result of SPSS output is shown in Table 4. According to this analysis, software developer's innovative performance strongly depends on their pro- activeness behavior rather than other two factor because software companies always respond to the market demand on ahead. Thus, software developers need to see opportunities and grab these rather than competitors in market.

**Table 4: Effect of Intrapreneurial Behavior on Innovative Performance**

| Model | B | Std. Error | Sig |
|---|---|---|---|
| (Constant) Innovative Performance | 1.422 | .297 | .000 |
| Risk Taking | .127 | .082 | .123 |
| Pro Activeness | .416*** | .125 | .001 |
| Innovation | .111 | .122 | .364 |
| R Square = .436<br>Adjusted R Square = .42129<br>F Value= .85<br>Durbin Watson = . 689 | | | |

Source: Survey Data, 2020

## 4. FINDINGS AND DISCUSSIONS

The study concludes that innovation is the most important factor to be an intrapreneurial. It points that most of the software developers possess the innovation behavior to develop their innovative product. According to the nature of software industry, software developers always make the innovative product to respond the market demand.

In this study, individual factors and internal organizational factors used as the major influencing factors for software developer's intrapreneurial behavior. The individual factors are personal knowledge, work experience, work commitment and motive. Among of these factors, their personal motive has positively significant relationship with intrapreneurial behavior. In addition, personal knowledge has significantly associated with the intrapreneurial behavior.

This study points out the internal organizational factors such as management support, organization's culture, reward & recognition and resource availability has positively significant relationship with intrapreneurial behavior. It indicates that if the organization's management well support, software developers more behave as the intrapreneurs within organization. In addition, if the organizations have sufficient resources that encourage their software developers to take risk, proactiveness and innovative. This study highlights the effect of intrapreneurial behavior on the innovative performance of software developers. Among three components, pro-activeness behavior has positively and strongly relationship with the innovative performance of software developers. It presents that selected software developers are employees thus they follow the organization's policies and procedures. However, they have the pro- activeness behavior because if their organization making the new projects to respond the market demand. Therefore, pro- activeness behavior is mainly contribution factor to improve their innovative performance. This study recommends that if the organization want to nurture the intrapreneurial employee, respective management level of selected ICT companies more focus on the software developer's personal factors and their organization's management system. Intrapreneurial software developers can develop the innovative product for their organization in order to gain the competitive advantage.

As a summary, the study expresses the importance of intrapreneurial behavior of software developers in Yangon and helps to ICT companies for nurturing the intrapreneurial software developers in order to gain the competitive advantage by making innovative product.

## 5. CONCLUSION AND IMPLICATIONS

The study revolves around limited in sampling issues. The further research should be conduct using a larger sample to present more concrete analysis of data. The further study can be more complete if the analysis can be conducted in other IT professions. In this study, data are only collected from software developers of ICT companies listed in Myanmar Computer Federation and the further research should be conducted to software developers, outside of Yangon for better results. The further research should be explored external environment to represent more comprehensiveness of the contexts of influencing factors on intrapreneurial behavior. In addition, further study should be analyzed relationship of the employee's intrapreneurial behavior and their organization's performance. Moreover, intrapreneurial behavior and impact on innovative performance of other industries can be worthwhile to understand and identify employee's intrapreneurial behavior and their performance in Myanmar's Business sector. Intrapreneurial concept should be used for future research not only based on business organizations but also on non-profit and public organization.

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