



VAASAN AMMATTIKORKEAKOULU
UNIVERSITY OF APPLIED SCIENCES

Chisom Chukwuka

&

Upinder Kaur Sondhi

**EVOLUTION OF EMOTIONAL
INTELLIGENCE, VIRTUAL TEAM, AND
JOB PERFORMANCE: A BIBLIOMETRIC
LITERATURE REVIEW**

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Upinder Kaur Sondhi

ABSTRACT

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The objective of the thesis is to systematically present the publication trends related to Emotional intelligence, Virtual Teams and Job performance, which is interdisciplinary research contributing to the refinement and extension of existing theories in organizational behaviour, psychology and management. This study performed a bibliometric analysis to investigate article research between 2010 and 2024. Within the scope of the study, 12912 publications were included in the analysis. Of these, 9146 were articles and 2490 other publication types. The analysis included 8291 English articles. The study provides a structured literature review on the keywords; emotional intelligence (EI), Virtual teams (VT), and job performance (JP). The researchers adopted the Web of Science (WoB) database in the analysis and use the Bibliometric R package.

A bibliometric analysis reveals trends in research publications, showing Emotional Intelligence as an emerging topic and trends in research as virtual teams were not visible. However, it seems that Virtual Teams are still a niche area of study. The keyword “Emotional Intelligence” stands out as the most frequently used keyword. This research contributes to the field by exploring current developments in the fields, highlighting current gaps in the literature, and recommending future research in this field. The fact that the keywords “Emotional Intelligence”, “Job performance”, and “Remote Teams” are frequently included in the literature showing that interdisciplinary academic studies in these fields are of great importance.

As a whole, the study aims to offer an overview of the bibliometric methodology and step-by-step guidelines for conducting bibliometric analysis for business research.

Keywords	Emotional intelligence, virtual team, job performance, company
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ABBREVIATIONS USED

EI/EQ	Emotional Intelligence
IQ	Intelligence Quotient
CQ	Cultural Intelligence
PM	Project Management
VI	Virtual Team
HR	Human Resource
GVT	Global Virtual Team
VPM	Virtual Project Management
VT	Virtual Team
JP	Job Performance
WP	Work Performance
SLR	Systematic Literature Review
WoS	Web of Science
VOSviewer	Visualization of Similarities
CSV	Comma Separated Values
MCP	Multiple country Publication
SCP	Single Country Publication
CA	Corresponding Authors
USA	United State of America
UK	United Kingdom
KPIs	Key Performance Indicators

1 INTRODUCTION

1.1 Background of Study

With fast-paced technological advancement, the world is witnessing improvements in working methodologies in the business field. As the latest tools for communication and collaboration are continually introduced to streamline daily work tasks and enhance performance, there is also a growing emphasis on the employee well-being with the expectation of the positive outcomes resulting in the organizational effectiveness. This brings us to a perspective that productivity at a workplace is not only dependent on the efficiency of the tools being used or might not be even fully reliant on employees' intelligence for that matter. Just like in many other countries (USA, Finland, UK), companies provide for example, wellness services, community well-being activities, and get-togethers. to their employees to unwind, de-stress and take a break from the hectic routine. This motivation to be present for the employees, and support them in some way must come from a certain type of mindset of being self-aware, considerate of others' emotions and being empathetic. These qualities, along with social skills, combined are known to form the concept of emotional intelligence. For the rest of this study, Emotional Intelligence and Intelligence will be abbreviated as IQ and EQ respectively. (Big think, 2012) Many researchers in the past have invested their time and efforts to investigate the concept of emotional intelligence and its importance in business and working life. Some researchers held a debate on IQ vs. EI, as Steiner notes that EI is merely "a marketing concept, not a scientific term" as it cannot be measured precisely (Steiner (1997) in Dulewicz et al., 2003).

Because of a change in the structure and format of employment and work settings, especially during the COVID-19 pandemic, which further accelerated the adoption of remote work as organizations adapted to public

health guidelines and implemented remote work policies to ensure business continuity, the prevalence of remote/virtual work environment has increased allowing employees to perform their job duties from home, a co-working space, or any other location with an internet connection. The transition to

remote work has created a gap in understanding how to lead, manage virtual teams effectively and impact on job performance. Tools such as instant messaging, emails, phone calls or group support systems such as google meet, teams etc. are mainly used for communication and perform work. Virtual environment brings challenges such as absence of face-to-face, communication gap, cultural issues, difficulty in building trust, rapport, and time zone difference and to overcome this challenges, communication and trust is important (Charlier et al., 2016). Virtual teams offer advantages to organizations, effectively managing and controlling them presents significant challenges. Virtual teams offer various benefits to companies and firms, including:

- Reduction in office costs
- Increased Productivity
- Possibility of 24/7 operation
- Access to a wider pool of talent
- Adoption of the “Work from Home” concept
- Reduction in travel expenses

Additionally, when collaborating in a virtual project management environment on team projects, effective communication is paramount because casual spontaneous conversations no longer take place. Communication needs to be planned and scheduled (Lam, 2016). The use of virtual teams, also known as “geographically dispersed teams”, “distributed teams”, or ‘remote teams’, enables organizations to perform task collectively than face-to-face located in close physical proximity. , Teams are collection of individuals who collaborate to perform organizationally relevant tasks, share and achieve one or more common goals or objective, and interact socially and make decision collectively (face-

to-face or virtually).It enables collaborations and communication and provides tools for team leaders to manage virtual teams effectively. Nevertheless, due to their characteristics of dispersion and technological mediation, virtual teams have several disadvantages or “challenges” that face-to-face teams do not have. Settings in which teams are expected to work autonomously require intentional collaboration and communication to be able to achieve their goals. This collaboration requires an increased effort to communicate among all team members and motivation by leaders (Project Manager). Technology plays a vital role in managing virtual teams (VT). Being able to manage one’s own feelings and an appropriate expression of emotions in a working environment as well as being considerate of others’ mental and emotional state must have some effect on the working atmosphere. The term “emotional intelligence” was first introduced by Salovey and Mayer (1990), referring to it as “a type of emotional information processing that includes accurate appraisal of emotions in enhancing one's life involves skillfully managing emotions, both in oneself and in others, while also adapting to various situations.” This concept, as highlighted by (Nikolaou & Tsaousis, 2002), underscores the significance of emotional intelligence (EI).

Renowned psychologist and author (Daniel Goleman, 1998) has played a pivotal role in disseminating the understanding of Emotional Intelligence. He emphasizes the crucial role of Emotional Intelligence in business, especially in leadership and employee development, stating, “Perhaps the biggest surprise for me has been the impact of Emotional Intelligence in the world of business, particularly in leadership and employee development.”

Emotions themselves are universal because everyone experiences them at a certain level, however, expresses them differently. This variation in expression is likely to influence the result. Since emotions affect behaviors, therefore, the behavior would have an impact on someone’s overall performance. (Reisman, 2015).

These days, occupational and organizational psychology and human resources management go hand in hand. Western businesses devote a lot of time to promoting team building and employee well-being, which suggests a possible relationship with the results they eventually achieve. Authors, therefore, were interested in conducting research in business psychology and examining how human behaviour, or emotional intelligence, functions in the corporate world.

1.2 Objective of Study

This is purposed to provide both scholars and practitioners with an overview of what we know, that is, the different content of use and the study covers article published in the last 14 years (i.e. 2010-2024) through a bibliometric study, analysing the academic literature based on the four main innovations in this review:

1. To identify key themes, trends, and patterns in the scholarly literature in terms of annual indicators, research areas, country distribution of publication journals and highly cited articles.
2. To examine the evolution of research interest and publication output in the fields of emotional intelligence, virtual teams, and job performance over time.
3. To analyse the interconnections and relationships between emotional intelligence, virtual team dynamics, and job performance in existing literature.
4. To provide insights and recommendations for future research directions and practical implications for organizations aiming to enhance virtual team effectiveness and job performance through emotional intelligence initiatives.

1.3 research Gap

A bibliometric package is employed for scientific mapping analysis, performing functions like those of VOSviewer. A Bibliometric analysis is essentially a quantitative study style used to declare the qualitative characteristics of a particular field. The main strength of bibliometrics lies in transforming the quality of intangible scientific literature into manageable entities (Du et al., 2013). Studies involving multiple research areas have conducted a bibliometric analysis to discover the development of literature on the target topic, associated publication sources, and collaboration network analysis between authors, journals, or regions (Xu & Ge et al., 2021). Several existing studies have investigated the effectiveness of Emotional intelligence, its impact in Virtual team and Job performance. However, there are no research that understand the relationship from the perspective of bibliometrics. Furthermore, the ideas and theories of bibliometric have gradually become valuable way for many scholars to open new academic research fields. This research provides a novel view, a quantitative analysis, an overview of the topic.

1.4 Research Questions

Based on this research, the purpose of the study is to understand the impact of emotional intelligence on job performance with respect to the virtual project teams by examining two factors: Emotional Intelligence and Virtual project management and their impact on Job performance. Therefore, the objective of the study is answering following questions:

1. What are the key themes and trends in publication during the period of 2010 - 2024?
2. What are the most influential articles and authors in this research field?
3. What are the gaps and areas for future research?

1.5 Structure of Study

Figure 1 summarises the structure of the thesis. After the background of study and main objectives in Chapter 1, the study continues with a literature review in Chapter 2. Chapter 2 introduces the literature review which comprises of the terms; Emotional intelligence, virtual teams and job performance, then interconnections between the three terms and finally presents a research model. The aim here is to create a general view for reader about the concepts and generate a connection for the EI, VTs and JP concepts.

Chapter 2 of this study explores the literature review on the definitions to create more understanding of the concept of emotions, emotional intelligence, virtual teams, communications, work performance, virtual team performance and the factors for enhancing performance in virtual project teams. The Chapter 3 will provide a brief overview of the research methodology that will be followed, flowing into the third section that provides the analysis of the data collected. This section describes the data sources and methods for bibliometric analysis, the results of the bibliometric study, including the performance analysis of the number, references, and distribution of publications, research areas, most relevant sources, and influential papers. Meanwhile, the network maps in conceptual, intellectual, and social terms are demonstrated visually. The final section concludes by presenting and discussing the key findings of this research and future research possibilities.

Research Questions:

What are the key themes and trends in publication during the period of 2010 - 2024?

What are the most influential articles and authors in the research area?

What are the gaps and areas for future research?

Structure of Thesis

INTRODUCTION: Background of Study and Objective (Chapter 1)

Literature Review (Chapter 2)

EMOTIONAL INTELLIGENCE

JOB PERFORMANCE

VIRTUAL TEAMS

What is Emotional Intelligence?

What is the relationship between emotions and Intelligence?

Emotional intelligence on job performance

What is Job performance?

Identify impact of EI on job performance

What is Virtual Teams?

Communication

Identify best practices for managing virtual teams in the age of remote work.

Emotional Intelligence, Job Performance and Virtual Team

Study Part: Unpack the evolutionary nuances of “emotional intelligence”, “virtual team” and “job performance” in business and management field as a keyword in the “article title, abstract, and keywords”



Bibliometric Methodology (Chapter 3)

Material collection

First search criterion: Search Strings and Boolean operators
("Emotional intelligence" OR "EI") AND ("global virtual team") AND ("job performance") AND ("company")

(a)

Web of Science
Primary-WoS Database
12,912 articles

Stage (i):
Material
collection and
refinement
(Screening)

Material Refinement

Second search criterion:(n= 4,621)
Limiting document type to "Article",
Language is "English"
Year (2010 – 2024)

(b)

Secondary-WoS Sub-Database:
8,291 articles

Having filtered the search results, the final sample was downloaded in a file format compatible with the software tool that will be used for analysis.



Stage (ii):
Bibliometric
analysis:
Database
merging and
statistical
descriptive

VOSviewer



Bibliometrix



(c)

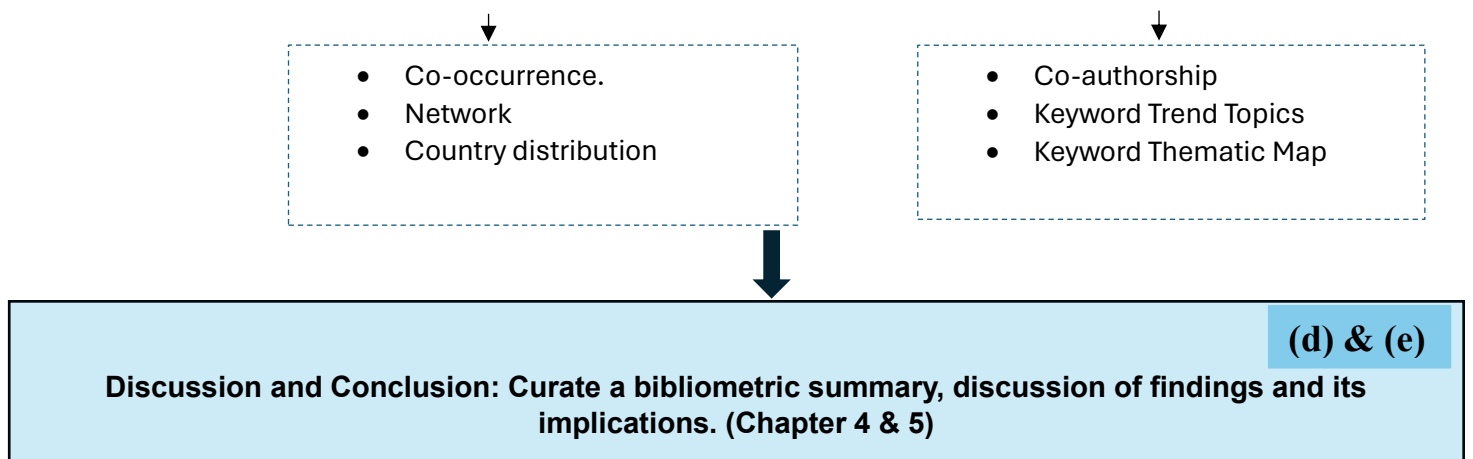


Figure 1. Data selection process and review methodology

2 LITERATURE REVIEW

This chapter is a presentation of literature related to the topic under investigation. The study is designed to establish the evolution of Emotional Intelligence, Virtual teams and Job performance. To this effect, the review of related literatures is guided by the major themes of the study thus: the concept of virtual teams, the concept of emotional intelligence, the concept of job performance.

2.1 Definition

2.1.1 Emotions

It is claimed that there is not any commonly agreed upon definition of emotion as such which is why there is an endless debate on the concept. (Mulligan & Scherer, 2012) Different psychologists have different definitions of emotions as per their understandings. In simple terms, emotions lately in psychology are defined as “a complex state of feeling that result in physical and psychological changes that influence four thoughts and behaviors”. Based on this definition, one can derive that emotions are feelings that an

individual experience based on the situation they are facing which have an impact on their behavior. This implies that physiological alterations occur in a person's body in reaction to the circumstances they observe, influencing their choices and other behaviours.

There are 3 major theories of emotions; physiological, neurological and cognitive where the researchers have different opinions about emotions. Cognitive Appraisal theory suggests that it is an individual's thoughts that lead them to experience emotions whereas, the Shachter-Singer Theory suggests that physiological signs are shown first, Identification of the causes of the emotions and recognizing it as an emotion. But, the Canon-Bard Theory of Emotions refutes the James-Lang Theory of Emotions, which holds that an individual must undergo simultaneous physiological and psychological changes in order to experience a particular emotion. The James-Lang Theory of Emotions also suggests that a physical response to a stimulus result in the experience of an emotion.

However, (Merriam-Webster 2020) to move forward within the common ground, it can be concluded that emotions are psychological feelings that have an impact on human behaviour to different extents based on their will to control them. For example, an employee at XYZ company is feeling extremely anxious because he has to deliver his first presentation in front of his CEO which also showed while he was presenting. In this case, anxiety was the dominant emotion he felt and failed to have control over it.

2.1.2 Intelligence

Humans are known as social animals and are considered the noblest creatures. Which means that apart from the basic five senses of hearing, seeing, tasting, touching and smelling, humans have the cognitive and intellectual abilities i.e. they can think, feel, learn, make decisions, solve problems, reasoning and plan, etc. (University, 2017). These abilities are known to contribute to a person's intelligence. This is also an extensively

studied topic in the past where there are many definitions of the word intelligence for example, “Intelligence involves some different mental abilities including logic, reasoning, problem-solving, and planning’ (Cherry, 2019b).

A simple dictionary definition of intelligence is “a construct that includes problem-solving ability, capacity for learning emotional knowledge, creativity, and adaptation to meet the demands of environment effectively” (“Dictionary.com| Meaning & Definitions of English Words,” 2020). Intelligence is known to be measured as the Intelligence Quotient (IQ), which measures how well a person can learn, evaluate, gain and implement skills and knowledge. An IQ test is used to derive the intelligence score of an individual that is then used in relevant areas. (Kolowich, 2015)

There are several different types of intelligence such as general intelligence, linguistic, logical-mathematical, musical, spatial and emotional intelligence. (Cherry, 2019b) In business, intelligence quotient abilities are essential for managing funds, developing effective plans, and comprehending the demands and market while being able to conduct attractive marketing strategies, etc. However, it is an on-going debate that IQ alone is not sufficient in business because apart from the usual operations, a successful business also requires proper team building, talent development, workplace commitment, creating loyalty, good leadership and interpersonal skills, therefore, emotional intelligence will be discussed in further detail along with the extent of its role in the business world i.e. management and organizational effectiveness.

2.2 Emotional Intelligence

Emotional intelligence goes beyond being a leader in terms of management either virtual Project management or face-to-face, and how to control others with their feelings and to use them to achieve satisfactory results – both individually and in teams. In working with Emotional Intelligence,

researchers reported positive effects on the workplace for people with elevated levels of emotional intelligence. For instance, PMs with high level of Emotional Intelligence (inter and intra-personal awareness) as well as ability to inspire others, to be attentive, to demonstrate a greater level of commitment towards the organization, to have more happiness at work and maximize the talents of all team members will optimize team effectiveness in a virtual team setting and overall performance (Robinson 2013; Plamer et al. 2003).

At the same time, PMs with high Emotional Intelligence are aware of the emotional situations of others, and they interact with project team in a manner that draws them to the participant. Leaders with a high emotional intelligence have more successful leadership traits than their emotionally less knowledgeable peers (Cooper 1997). If a leader for instance expresses his/her emotions violently and has a high EQ this does not mean that the leader has a high EQ but rather the leader that uses his/her emotions in problem solving as leaders has direct influence on their team members. The use of Emotional Intelligence skills in evil or functional purpose depends on the trait and characteristics of the leader himself not on the assumption that he has a high Emotional Intelligence or not. The leader in this case can manipulate the team emotions to do certain things in his favor.

Emotional intelligence also helps to create an environment of trust within the workplace, and this allows individuals to manage their emotions and anxiety when they encounter unexpected challenges or situations. High emotional intelligence enables team members to engage in productive discussions that help them address the various conflicts arising in the workplace.

Another study explores the potential benefits of emotionally intelligent leaders and members, virtual team members and leaders. The findings within the study indicated that Emotional Intelligence improved virtual team

members' performance and contributed to project success. The implication of this provides an organization leader with a blueprint of the type of employee they should see while hiring virtual team members. Enough previous research discussed virtual team selection test seeking employees that have EI characteristics (Quisenberry, 2018). Managing a team has never been an easy task and more problematic when leaders manage virtual team. Due to limited social interaction, VT members happens to be seen as introverts (Quisenberry, 2018). However, it is not being overly introvert because they need to reach out to others for help and clarifications which is identified as interpersonal skills while collaborating with diverse cultures and groups of people to ensure the project is executed effectively.

In a recent literature, (Hosani et al., 2023) demonstrated the importance of Emotional Intelligence as a soft skill for project success and project manager communication skills. The study involved data from the Ministry of Health and Prevention with focus on the managers, HR departments, of which finding shows focus on Emotional Intelligence skills few years back. This means Emotional Intelligence as a soft skill is not considered during employee recruitment. The manager said Emotional Intelligence can add value to project managers' communication skills and success. Project managers with high Emotional Intelligence tend to accommodate one another's feelings and deal with the team appropriately, making the team motivated as well as contributing to the overall success of the project (Alzoubi et al., 2022c).

Transformational leadership styles have been found to be more competent having high emotional intelligence that explains why transformational leadership in project management is associated with successful projects. The project team members are inspired and motivated, feelings and emotions are recognized by the Project manager. (Mounir M. El Khatib et al., 2019). This research focused on managers' emotional skills and the hiring process in the Ministry of Health and Prevention with no focus face-

to-face, Virtual project management or Hybrid system and thus there was a research gap existing for this article.

Paraskeva (2020) examined the virtual team effectiveness taking a deep look at the virtual world team of ICTs (Massively Multiplayer Online Games) as a focus for understanding leadership exploring the impact of gender on the key factors of team effectiveness, When women are guided by an emotionally intelligent leader who practices transformational leadership behaviors, they are more satisfied and tend to stay longer in the team. Based on the researcher findings, there is a significant relationship between perceived leader emotional intelligence and virtual team effectiveness revealed by transformational leadership behavior. Additionally, many publications were focused on transformational leadership style. It is the key predictor of virtual team effectiveness including team member satisfaction, performance, staying and working together. Furthermore, it shows the gender differences in players perceptions on their leaders Emotional Intelligence. Women's perceptions of their leaders' emotional intelligence, in all aspects of Emotional Intelligence, were found to be significantly more favorable than those of men. Women are thought to be more intuitive and empathetic than their male counterparts (Downey et al., 2006). Another explanation of analysis based on gender could be that women prefer groups that are guided by leaders with a higher level of emotional intelligence and who tend to practice idealized influences, gives personal attention, treats each employee individually, coaches and advises to a greater extent more than the men. This study found was lacking focus on the level of virtuality of the participant, which was one of the study limitations, participant educational background. Women tend to be in expressing emotions whereas men have difficulty in labelling their emotions.

Gamero et al. (2021) examined the extent of emotional intelligence composition on, indicators of team members' well-being and members' satisfaction with the team. The result shows that Emotional intelligence has

been identified as the key driver of virtual teams' members well-being. However, studying the role of intelligence in teams in which an intelligence type (EQ, CQ and cognitive ability) was as a variable. The review result shows that variables can be considered as an important factor contributing to team outcomes. More specifically, EQ and CQ account to have more impact on team performance rather than cognitive ability. The findings demonstrate a growing interest in global virtual teams. Moreover, Covid-19 has increased the popularity of research in global virtual teams as most organizations were forced to shift to working remotely as individual ability to behave effectively in multicultural situations is evident.

The role of emotional intelligence in virtual project management and the challenges faced by VPM. Researchers correlate each of the four dimensions (self-awareness, self-management, social awareness, and relationship management) of Emotional Intelligence to the elements of VPM with respect to the identified challenges faced in VPM. Based on the data collected, it was discovered that EI helps project managers to cope with the challenges of VPM through balancing the four dimensions of EI. So, I can say that a positive relationship exists between EI and VPM and managers with high EI are better equipped to deal with the challenges of VPM (Shazia Nauman MEM, 2006). According to (Goleman, 1998) 75% to 90% of effective performance, particularly in the case of managers and leaders, is attributable to **"emotional intelligence"** (EI). It was shown that managers with more self-awareness and social awareness competencies perform better in the VPM. Several studies suggest that Global Virtual Teams (GVTs) face significant challenges in four major areas: communication, culture, technology, and project management (Kay worth, 2000). This study included the role of Emotional Intelligence and virtual project management with no context on the level of productivity/Job performance. The study was lacking the Job performance focus so there is a research gap.

Many researchers agreed with the result that employees with high emotional intelligence are better performers than their partners (H. M. Alzoubi et al., 2022c; Van-Rooy et al., 2004; Carmeli et al., 2006 and Rosete., 2007). Study have conclude that there is a significant difference between genders in aspect to emotional (Feimi & Vela, 2023) showing a strong relationship between emotional intelligence and work performance with respect to gender notes that "Emotional intelligence accounts for 24.1% of the discrepancy in female job performance and 35% of the discrepancy in male job performance." "Self-management, self-motivation, and self-awareness account for 66.2% of the discrepancy in male job performance, while social awareness accounts for 17.4% of the variations in female work performance." I clearly notice that women work performance is affected by their ability to understand the feelings and views of others to show active interest in their concerns. The result of study is consistent with the findings of (Paraskeva, 2020; Downey et al., 2006) where women's perceptions of their leaders' emotional intelligence, in all aspects of Emotional Intelligence, were found to be significantly more favorable than those of men. women are thought to be more understanding in nature and caring/kind than their male counterparts. This finding is specific to this industry (Vlore banking institution). On the contradiction also (Goleman, 2018; Arteché et al., 2008) are of the opinion that there is no gender difference in emotional intelligence showing that the different genders display varying strengths and weaknesses across various domains of emotional intelligence as men are better in regulating their emotion when dealing with human (with females scoring higher in certain aspects).

Additionally, the impact of Emotional Intelligence and personality trait on managing team performance in virtual team study demonstrated that virtual team members believed that Emotional Intelligence skills contributed to the success of projects, organizing training on Emotional Intelligence for employee can increase the employees' Emotional Intelligence, develop and

improve employee performance. Study went further to reveal “project managers with high Emotional Intelligence and shown in a manner that they have faith in others, feel good about themselves, manage negative emotions, willing to try new things are effective in virtual interface teams than other (Susan Murmu, 2022). The writer suggested. There is no focus on the level of job performance done by the team members on virtual teams so there is a research gap. While many assertions exist regarding the beneficial effects of emotional intelligence on Job performance. (Bhadouria, 2014; Koutsioumpa, 2023) examines the correlation between Emotional Intelligence and Team performance. The research findings indicate that Emotional Intelligence has a significant impact on Job performance and proposes that organizations should differentiate between high Emotional Intelligence and low Emotional Intelligence teams. Thus, the study recommends intervention on the low Emotional Intelligence teams by introducing Emotional Intelligence training in the organization to acquire Emotional Intelligence skills. Doing so, Managers will be able to communicate to the teams in a better way.

Research findings indicated the significance of Emotional Intelligence and its influence on workplace situations, recruitment and selection. The study revealed that employee job satisfaction and performance are significantly influenced by their Emotional Intelligence (Pal, 2023). During recruitment, hiring employees based on their emotional intelligence capability is crucial since it determines individuals' job performance (Luthans, 2010). Emotional Intelligence test should be considered to test an employee's capacity to control his/her emotions and recognize those of others so as to increase Job performance and satisfactions.

(Aydin et al., 2005) investigated the impact of IQ and EQ on preeminent achievement in organizations and how do they affect the hiring decisions of the human resources management. The study was conducted on Turkish banking sectors which is supposed to be having well qualified employees

as the area to be dealt by them is finance and accounting. The sample was supposed to fill questionnaires for the study where the results showed an equal effect of both the factors on the performance and that both IQ and EQ should be considered during recruitment to hire an appropriate workforce. With the changing times, the criterion for recruitment is also evolving. What used to be the key valuable qualities of an employee decades ago might not just matter today. The consideration of emotional intelligence in the past was not as significant as the intelligence quotient. The results of this study show that a combination of both EI and IQ are considered while hiring competent employees. As much as educational qualification and analytical skills matter, interpersonal skills and managing relationships hold equal importance.

There can be a possibility that these findings could be influenced by the type of job roles or profession that the study was carried out in. Whereas most of the researchers advise focusing on considering social and emotional competences to predict organizational effectiveness. Differentiating successful managers from others based on traits such as optimism, having a clear goal to achieve, communication and relationship skills. (Zeidner et al., 2004) These are also some of the main emotional intelligence skills.

In an interview Daniel Goleman (1996) notes that “both EI and EQ are important but in different ways. IQ contributes 20% to factors determining life’s success, 80% is left to everything else i.e. a lot depends on skills that make up emotional intelligence’. Goleman’s efforts in promoting the concept of Emotional Intelligence and its importance are noteworthy. A comparison by him about the skills required for academic success also involves Emotional Intelligence skills apart from the IQ as Goleman believes Emotional Intelligence traits too are helpful in academics. The evidence of inclination towards Emotional Intelligence traits to achieve high-performance of the organization is quite apparent from most of the previous literature. Four out of five companies have been now trying to promote

emotional intelligence in their organization. This finding was brought to light through a benchmarking survey carried out among large business organizations. (Zeidner et al., 2004)

The topic of emotional intelligence has so much to be explored and is always giving varying results depending on country to country, business to business, organizational differences and the job role. (Downey et al., 2011) carried out a study on a cultural context (Australia) regarding “Recruitment Consultant Revenue: Relationships with IQ, personality, and emotional intelligence”. They carried out questionnaire-based research on 100 recruitment consultants in Australia, assessing their IQ, personality measure and emotional intelligence. The results derived were positive compared to what they were aiming to find out. Emotional Intelligence and personality traits did affect job performance based on how much revenue was being earned. Emotional intelligence emerged as the most effective in predicting job performance in comparison to personality and IQ. This study aligns with previous studies, reinforcing the notion of the positive influence of emotional intelligence.

A lot of studies reveal that the high Emotional Intelligence of the team or the team leader does not appear to be the panacea for team performance. meaning that team leader Emotional Intelligence has a neutral to negative relationship with team leader emotional intelligence and team performance. From my research so far, little empirical research has been given to support such claims on emotional intelligence and its relationship to team performance. however, no correlation occurred between identifying emotions and any performance measure for virtual team (Feyerherm & Rice, 2002). However, team leaders’ emotional intelligence affects the team level of emotional competence and team performance (Koman & Wolff, 2008)

(Rezvani et al., 2019b), contributes to understanding the relationship between Emotional intelligent team, trust, conflict and team performance. Project managers/leaders should focus on creating trust in the relationships among team members as the study highlighted the impact of trust. A lot of research has revealed considering emotional skills as part of the selection criterion in hiring (Rezvani et al., 2019b p.131; Pal, 2023; Luthanas, 2010). (Rezvani et al., 2019b, s. p. 131) further stated in promotion and training of staff in project teams.

(Moradi & Hosseinpour, 2018) carried out a study on “The relationship between Emotional Intelligence and Job attitude of Managers and Staff” in which managers and teams were accessed. The result showed that Emotional Intelligence has a significant relationship with job attitude of managers and staff. Emotional Intelligence of people increases, there job attitude improves as well. Meaning that there is more sense of self-esteem and satisfaction with his job. The job attitude has a direct or indirect impact on the organization, one of the most crucial factors enhancing the level of performance of managers and team in an organization is the mutual understanding between managers and members of the team.

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Table1. SLR on Emotional Intelligence

AUTHORS	TEAM TYPE	SAMPLES	KEY FINDINGS
(Pareskeva et al., 2020)	Virtual Team	Multiplayer Online games	Perceived significant relationship between perceived leader emotional intelligence and virtual team effectiveness revealed by transformational leadership behaviour with focus for understanding leadership exploring the impact of gender on the key factors of team effectiveness
(Garmero et al., 2021)	Virtual Team	Employees	Study identified Emotional intelligence as the key driver of the team members well-being and highlights the effectiveness of a team emotional intervention to its impact on the virtual team.
(Paik et al, 2019)	face to face	Employees	revealed team members EI is a robust directly improves performance of individual in a self-managing team. Emotional Intelligence is a robust and salient

			predictor of team performance.
(Davai & Gunkel, 2024)	Multicultural team and Virtual	Employees	The research suggest that organizations should integrate to the various intelligence types into human resource process and invention of EQ and CQ trainings should be developed.
(Bhadouria, 2014)	face to face	Employees	The result indicated that Emotional Intelligence has a positive impact on Team job performance and recommended the intervention on the low EI teams by introducing EI trainings in the organization to acquire EI skills
(Koutsioumpa, 2023)	face to face	Employees	The analysis places significant emphasis on the impact of emotional intelligence in enhancing job performance and importance of encouraging the

			<p>cultivation of Emotional Intelligence among teams. In addition, the main duty of management is empowerment of staff to provide joint performance through common goals, shared values and training them in performing the work and showing proper and timely response.</p>
<p>(Pushkarna, 2022)</p>	<p>face to face</p>	<p>Employee</p>	<p>Emotional Intelligence mediates the significance in areas of self-awareness, social skills and managing others while interacting with others in a stressful work environment.</p> <p>Additionally, the five (5) components of Emotional Intelligence subscales are social skills, managing others and empathy as Interpersonal competencies while Self-awareness and managing emotions are Intrapersonal</p>

			competencies. The ability to use feelings and a stimulated team structure has a strong connection.
(Feimi & Vela, 2023)			Organizations should take Project manager trustworthiness and emotional intelligence when recruiting and should conduct trainings to increase the competence of employees.
(Moradi & Hosseinpour, 2018)	face to face	Managers and Staff	The emotional intelligence of people increases, their job attitude improves. Additionally, the person would have more sense of dependency to the organization, act well in the decision and participate more in teamwork.
(Sultan et al., 2015)	face to face	Employees	Emotional Intelligence is a consistent predictor of leadership behavior. Managers with high Emotional Intelligence have effective leadership in their organizations. However, the behavior of Leaders can be

			interpreted in the light of their levels of EI and personality.
(Reinaldo et al, 2021; Gilliani & Rahardjo, 2023)	face to face	employees	Project managers use both intellectual intelligence and Emotional Intelligence in carrying out a project as team members expects the managers to use more of EI abilities to lead the team and a positive effect on job satisfaction.
(Chauhan & Bandi, 2021)	Virtual Team	Secondary sources	Revealed that trust and efficient communication are important to work more effectively and performance. Additionally, emotionally knowledgeable leader should cultivate the characteristics of a team such as appreciation, helpfulness and teamwork helps the team t be optimistic while they minimize barriers to team progress.
Dirican, A.H. & Erdil, 2020	Online	Academic staff	According to the findings of the article, “ability-based emotional intelligence” plays a significant role in terms of

			“increasing organisational citizenship behaviours and reducing counterproductive workplace behaviours in the workplace”.
Bru-Luna <i>et al.</i> , 2021	Online	Online Article	The research findings have demonstrated the concept of Emotional intelligence which has been described as a fundamental fact in today’s business environment.

2.3 Virtual Team

There are factors which are found to be impacting the success of the virtual project teams. As opined by (Davidavičienė *et al.*, 2020), it has been observed that organizational changes are occurring for several reasons including reduction in budget, recession, advancement in the information and communication technology (ICT) and market pressure. There are organizations that responded to organizational changes by introducing the idea of virtual teams in which members can be geographically dispersed while organizing work and communicating using ICT tools. There are other factors also observed including a competent project team, trust among project members, meeting budget requirements and efficient ICT tools. Besides these identified factors, ICT has several challenges including cultural barriers, response delays, scheduling conflicts, feedback delays, time difficulties, misinterpretation, and lack of communication (Davidavičienė *et al.*, 2020). The identified factors have the potential to

challenge the success of virtual project teams. As opined by (Morrison-Smith and Ruiz, 2020), teams participate in a virtual team using a variety of collaborative activities like arranging formal as well as informal meetings using platforms like transfer of files using technology, video conferencing through Skype, Zoom and Microsoft Teams as well as application sharing. As a result of this, difficulties are being faced by the virtual teams in collaborating, making the process more complicated in arranging successful co-located teams. Along with this, it has also been found that a substantial amount of time and money has been spent by virtual teams in relocating team members for certain projects in order to refrain from the hindrance faced by teamwork because of the distance. Geographical distance is one of the identified factors affecting virtual team performance. Because of the geographical distance, there can be a lack of awareness among colleagues and their contexts, difficulty in establishing trust among project team members, technical competency of the team members, explicit management, level of technical infrastructure, competitive culture, common ground and alignment of goals and incentives (Morrison-Smith and Ruiz, 2020). Along with this, there are other factors identified including management of effective communication, customer satisfaction and meeting schedule requirements, among others. As opined by (Lee, 2021), hybrid teams are the common form of virtual teams. It has been observed that leaders of hybrid teams are struggling to remain competent in managing the global virtual team members and traditional collocated team members that will demonstrate the concept of success. Other factors identified are language barriers lowering the opportunities for communicating information, differences in interpretation, differences in the perception of the things that cannot be seen at the time of virtual communication, cultural differences and confusion in time-zone differences also affect the virtual teams' communications (Lee, 2021). Besides this, establishing coordination among team members in varied time zones is a challenging part for virtual team leaders. Additionally, team and intercultural communications for defusing conflicts and establishing trust within prevalent cultural differences in

deadline adherence and work environment are also some of the factors affecting the success of virtual team performance.

(Bangkit, 2022) identified the practices for managing virtual teams in a remote environment. The study suggested that being a successful leader in virtual team requires a movement of priority from task-oriented to people oriented including practices such as frequent communication both formal and informal, trust building, providing feedback among team members to ensure the success of virtual teams. Virtual team requires a different skill than face-to-face management due to the challenges. The study focus was for a specific context; it should be explored in a different one.

The theoretical framework digs further into leadership which is a crucial component in the management of remote teams since it has a huge impact on employee job performance and motivation. (Khatia et al., 2023) identified the leadership style and the impact on remote environment. To better understand the viewpoint, Transformational leadership, emotional intelligence and communication skills connected with job satisfaction, motivation and productivity. There was no result on the level of job performance so there is a research gap.

(Miller, 2024) suggests how to support employees to navigate stress and uncertainty. He mentioned making space between meetings. Research prove that your brain needs breaks, points out that “short beak” is the remedy (Wiseman, 2021) and from experience back-to-back virtual meetings are stressful, your brain works differently when you take time out between meetings. Taking breaks between conversations eases stress as our social brain system are not as activated when we are in a virtual context.

The second one is lean into social engagement, your body needs to mobiize your social support networks. There is something more vulnerable about the world today. People are sitting at home they are on their computers; they are more isolated. The need for connection is greater and, in that vulnerability, there is more opportunity to build connection and trust (Miller, 2024).

Furthermore, (Abrams, 2019) proposed the future of remote work. Tele-work can increase employee productivity, creativity, and motivation. In working, Golden and his colleague reviewed and found that telecommuting increased job satisfaction, performance, and feelings of commitment to an organization among employees (Allen et al., 2015). Telecommuting has been linked to several metrics important to organizations' bottom line namely, employee performance and productivity, wages, absenteeism, turnover, and overall firm performance.

The current state of the art literature suggests that managing remote team requires a different set of skills compared to face-to-face management. The remote work environment brings its own challenges, such as the absence of physical cues, and the difficulty of building trust, shorter span of working together, greater cross-cultural contact, misunderstanding and conflict, the teams outcomes are influenced by various input factors. additionally, remote teams require more frequent communication, and the communication channels should be carefully selected to ensure that team members receive the necessary information in a timely and efficient manner as technology plays a vital role in managing virtual teams. (Alward & Phelps, 2019; Fleischmann et al., 2020; Zhang, 2022).

According to (Mwamba & Malik, 2022), the study highlighted the importance of using audio-video calls during virtual meetings to mitigate employee isolation. Employing audio-video calls enables a better understanding of communication dynamics and enhances connectivity within virtual teams. Also, the study found that virtual teams may experience reduced effectiveness compared to traditional teams due to their reliance on technical equipment and frequent IT issues. To address this challenge, project managers need to strategically position their virtual teams within the organization, articulate the value of virtual teamwork, and ensure that team members have access to optimal IT equipment and infrastructure, whether they are working remotely or from a home office. Teams comprising engaged and motivated members consistently outperform those with

disengaged employees, leading to improved productivity, profitability, and retention rates (Akram et al., 2018).

Studies have shown that elevated levels of trust correlate with enhanced team performance, particularly in the realm of virtual teamwork (Gurung & Edmund, 2017). While collocated teams often rely on interpersonal relationships to foster trust, effective virtual teams prioritize task-based trust. As team members consistently demonstrate accountability over time, they reassure others of their reliability in fulfilling commitments and taking responsibility for completing assigned tasks (Akram et al., 2018). Further studies assist in pinpointing significant communication deficiencies and their impact on collaboration. It underscores that effective collaboration hinges on proficient communication. Deficiencies in communication can hinder effective collaboration within virtual teams (Rehman et al., 2021). Effective communication and collaboration among virtual team members are essential for the successful completion of project activities.

A study done in University of Johannesburg, South Africa in an organization showed that Organizational culture significantly impacts virtual project performance, and the absence of project management maturity has a detrimental effect on the success of virtual projects (Katane & Dube, 2017). Organizations that adhere to project management standards, effectively implement project management methodologies, and consistently follow the associated project management processes tend to achieve higher levels of virtual project performance. So there exists a relationship between virtual project performance and project management maturity.

The success of virtual project teams was more heavily influenced by organizational culture and factors such as effective leadership, trust, communication, and team commitment than by project management maturity. Research consistently underscores communication as one of the foremost factors contributing to the success of virtual project teams (Rehman et al., 2021; Alward & Phelps, 2019; Fleischmann et al., 2020; Zhang, 2022; Quisenberry, 2018; Katane & Dube, 2017)

As many past research studies have suggested, GVTs major challenges is related to communication complexities to dynamic team interaction (e.g., trust issue, time difference, cultural differences).

Table 2. SLR on Virtual Team

AUTHORS	TEAM TYPE	SAMPLES	KEY FINDINGS
(Abarca et al., 2020)	Virtual Team	Online articles	The research findings have described “the rapid advance of virtual convergence” as a result of the rapid developments within information technologies. The research article concluded that the advancements in technological approaches permit collaboration and teleworking in virtual teams. Moreover, it can be perceived that the concept of virtual teamwork is a technological advancement.
(Garro-Abarca et al., 2021)	Virtual Team	“Software development teams”	There are some influential factors that have a direct influence on the performance of virtual teams. Leadership, task features, trust and communication are influential factors in virtual team performance. In addition to this, IT skills also play an influential factor in the development of team performance.
(Davidavičienė et al., 2020)	Virtual Team	Online articles	“Culture, motivation, conflict, ICT, trust and leadership” have been identified as some factors that can influence knowledge sharing within virtual teams. Hence, it can be said that these factors can influence the performance of virtual project teams.

(Morrison-Smith and Ruiz, 2020)	Virtual Team	Relevant studies	The article has demonstrated that the physical factors relevant to the distance such as social, cognitive, and emotional challenges can affect the virtual teams and their performance. This article has also highlighted other factors such as Intra-team conflict, “face-to-face communication” and “nature of work” which can influence the performance of virtual teams.
(Lee, 2021)	Virtual Team	Online articles and employees	“Successful virtual communications” play a significant role in terms of “managing nontraditional projects” such as virtual projects.
(Coronado-Maldonad & Benítez-Márquez, 2023)	Virtual Team	Online articles	EI or Emotional intelligence can be mentioned as a “crucial element of the competencies” in terms of “effective leadership and teamwork performance”. It has been observed in the article that “leaders’ EI and effectiveness” have a significant impact on virtual teams.
(Gamero et al., 2021)	Virtual Team	Online articles	The findings of the research have shown that the “emotional intelligence composition” of the virtual teams can be described as “a key driver of the team members’ well-being”. In addition, a moderate impact of this composition has been observed on the team member’s well-being. This implies the positive impact of Emotional

			Intelligence competition on virtual team performance.
(Davaei et al., 2022)	Virtual Team	Business students	The study has explored the significant influence of emotional intelligence on the performance of virtual teams at the global level. Hence, it can be perceived that virtual project team performance can be influenced by emotional intelligence.
(Warrier et al., 2021)	Virtual Team	Online articles	The article has demonstrated that emotional intelligence plays a moderator role in terms of “virtual communication and decision-making effectiveness”.
(Richter et al., 2021)	Virtual Team	“Global virtual teams”	The article has described that cognitive intelligence, social intelligence or emotional intelligence can be translated “automatically into effective cross-cultural adjustment, interaction and effectiveness”. In addition, it has been observed that virtual teams can influence “social integration and performance”.

2.4 Job Performance

Emotional intelligence impacts the career of the employees and also their workplace. Emotional intelligence work develops the performance of people by motivating positive connections, social conditions and team performance. Managers deal with the issues in monitoring and managing VT performance in the UK. This is important that managers understand the variables that under the performance of virtual teams. There is an impact of the different attributes of the leadership and teams on the performance of the virtual teams in public corporations. As per the view of (Elyousfi *et al.*,

2021), social exchange theory helps to understand the connection between leaders and VT team members. They emphasized that the ideas of social exchange depend on resources exchange that result in the outcome related to the performance of the people. Leaders face challenges in setting up, managing, designing and finally operating the teams which can be the outcome of lower productivity and reduced performance levels. Work engagement is the positive emotional state related to the work which is associated with dispersion and persistence. The connection between job performance and job involvement remains the same. As per the words by (Yao et al., 2022), the increase in work emotional engagement and behavior will develop which lead to an enhancement in the performance of the job. The increasing working environment develops job performance. This brings about the development in job performance and results in the loss of people's mental health by leading the "energy exhaustion, anxiety, burnout, disappointment and other negative emotions" reducing the performance of the job and lead the rate of turnover and health problems. Employees depend on their own efforts to deploy the resources which they can do to maintain the working requirements. Increasing engagement of the staff in work and enhancing work efficiency has the ability to innovate and enhance the employee's engagement in work as well as enhancing the total amount of business to handle the performance of the company.

Job performance is the skills of the employee to work, and the performance of the job determines whether the person does well. The productivity of the organisations and the success of the company are dependent on the satisfaction of the employees' work. As per the insights of (Ghazi *et al.*, 2022), the main aim of the management and companies is to increase employee satisfaction. Employee job performance is impacted by the difference of components at work. Increasing employee job satisfaction is a factor of strategies to develop the performance of employees. The satisfaction of the job impacts the job performance in different ways. The expectations of performance are one of the goals which the company utilizes while reviewing their work. Employee performance leads to

organizational success and low employee performance leads to the failure of the company. During the pandemic, the professionals of healthcare encountered different health hazards which impacted the workplace and personal life. Emotional intelligence (EI) has an impact on an employee's success and performance in the workplace. There is an impact of EI on job performance among employees during a pandemic (Alonazi, 2020). The aspect of Emotional Intelligence is associated with the practice in the scope of staffing impact on the different job experiences. Emotional Intelligence defines the ability to manage emotions with the process of cognitive or motivating with respect to the goals. developing Emotional Intelligence balanced the increase in both social performance and professional success. As per the thoughts of (Alonazi, 2020), on the connection between job performance and Emotional Intelligence. Different investigations have attempted to understand the involvement of Emotional Intelligence in moderating performance in the workplace. Emotional Intelligence is considered to be the one important component responsible for designing the performance. The effect of Emotional Intelligence on organizational performance among employees and the strong effect of Emotional Intelligence on organizational performance is linked to job commitment and retention. Emotional Intelligence does not understand the components of job performance among employees working in different departments. The developing consistent and reliable means of KPI which related to different Emotional Intelligence levels among employees such as burnout domain and communication skills. The study focus on increasing decision making and knowledge sharing leading to better job performance in companies.

According to (Duan *et al.*, 2024), job performance can be enhanced by improving “coordination, communication, knowledge sharing and decision-making”. However, it has been argued in this article that excessive use of social media can lead to communication, information and social overloading which can significantly reduce overall job performance. In this context, it can be mentioned that better information sharing can help the organizational employees develop their job performance which is even possible in the

virtual platforms. As discussed by (Loan, 2020), organizational commitment and employee job satisfaction levels have a positive relation with job performance. This implies that poor organizational commitment and poor job satisfaction can reduce job performance which is not suitable for organizational business growth. In this context, it is important to mention that over-focusing on the job satisfaction level of the organizational management system can divert them from the organizational goals. In this phase, organizations have to maintain a balance in terms of providing job satisfaction to ensure the expected outcomes of the employee's valuable contribution. Hence, it can be said that job performance can be enhanced by considering the application of digital technologies which is mandatory in today's changing business environment.

Table 3. SLR on Job Performance

AUTHORS	TEAM TYPE	SAMPLES	KEY FINDINGS
(Elyousfi et al., 2021)	Virtual Team	“Global virtual teams”	The research addressed that the perceived dynamics of the team including the behaviour of the team members, support and collaboration have an impact on the performance of the virtual team members. On the other hand, the perceived e-leadership that has the trust of the leaders, behaviours and communication of the leaders affects the performance of the virtual teams.
(Yao et al., 2022)	Virtual Team	“Global virtual teams”	The measure of the employee's job performance is suitable for the measurement of the knowledge of the employee's job performance. The scale of the employee job performance across the four elements of relationship performance, learning performance, innovation performance, and task performance.

(Gazi et al. 2022)	Virtual Team	“Global virtual teams”	The findings showed that there is a strong connection between job performance and job satisfaction. the survey has been done and compared to the respondent's characteristics; the job-related elements have an effect on the performance of the job.
(Alonazi, 2020)	Virtual Team	“Global virtual teams”	The paper shows the nurses report and the rate of the Emotional Intelligence. Nurses are the care units demonstrated the high rates of Emotional Intelligence by nurses in neonatal intensive care, and intensive care. Nurses working in therapy demonstrated the lowest rates. During the crisis, the nurses reported the impact on their job performance.

(Duan et al., 2024)	Online	Online article	The research paper has analysed the significant role of digital technologies in terms of enhancing job performance. The research findings showcase that job performance can be enhanced by the use of digital technologies where the improvement of communication, coordination, decision-making and knowledge sharing.
(Loan, 2020)	Online	Employees	The article has analysed the significant role of job satisfaction in job performance. In addition, it has been found in this research paper that organisational commitment can positively influence the job performance of workers.

2.5 Emotional Intelligence, Virtual Team And Job Performance

Communication plays a role in leadership and virtual team effectiveness. Research on virtual teams has demonstrated the importance of effective communication and coordination within virtual teams (Lipnack & Stamps, 1997). Trust among team members has been shown to be significantly related to team performance: teams that have more trust in one another tend to perform better (Jarvenpaa & Leidner, 1999).

2.5.1 Emotional Intelligence and Business

The research carried out by Peter Salovey and John Mayer (1990) resulted in the first introduction of the term emotional intelligence where they refer to it as “a type of emotional information processing that includes accurate **appraisal** of emotions in oneself and others, appropriate **expression** of emotion, and adaptive **regulation** of emotion in such a way to enhance living” (Nikolau & Tasaousis, 2002). Similarly, according to (Daniel Goleman 1995), “any desirable feature of personal character not represented by cognitive intelligence” defines emotional intelligence (Zeidner et al., 2004) He presented four (4) areas that come together to build emotional intelligence i.e. **self-awareness, self-management, empathy and social skills**. (Big Think 2012) **Self-awareness** indicates how well an individual understand themselves, their own behaviour and emotions, how do they interpret what they see and what impact do they have on others. **Self-management** refers to having control on one’s own emotions and behaviour. **Empathy** is one’s understanding of wants, needs and perspectives of others i.e. “the recognition of feelings even when those feelings are not, i.e. the capacity to imagine oneself in another person’s position (Connors 2018).

Lastly, **social skills** relate to interpersonal skills such as maintaining positive relationships, being able to successfully lead people and get along with others. (O’Neil 1996) Hendrie Weisinger, also includes self-motivation in the components of emotional intelligence referring to it as how well someone manages to carry out tasks that they dislike. He also states that “do not confuse more knowledge with becoming more intelligent” (Reisman 2015).

Analysing these definitions one can derive that the amount of control an individual has on their own emotions and actions while having an understanding of emotions of other people around, is a factor that can have an effect on their surroundings, which equally applies to the workplace atmosphere and ultimately the business. The components of emotional

intelligence such as social skills are one of the necessary traits needed for successful teamwork and leadership. Similarly, being considerate of employees' and colleagues' feelings and situations also influences one's reputation and their success in achieving their goals while increasing everyone else's commitment to the job. In a workplace scenario, everyone's cooperation is necessary to succeed therefore, having a 7 healthy relationship and supportive environment affects everyone's productivity. A study by Cooper 1997 compares people with low and higher emotional intelligence traits and found out that people with higher emotional intelligence had more career success, can build stronger personal relationships, are better leaders and are known to be healthier than the group with lower emotional intelligence levels. (Zeidner et al. 2004) In a business scenario, (Goleman 1998) explains good communication skills to be one of the traits of people with higher emotional intelligence as their ability to effectively persuade people, guide and lead a team effects the outcomes of the projects. Another perspective to defining the impact of emotional intelligence based on Bar-On Model is that it (emotional intelligence) "influences one's ability to succeed in coping with environmental demands and stresses, undoubtedly a crucial set of behaviors to master in high-stress professional settings (Zeidner et al 2004).

Even though many researchers have explored this area of intelligence and its impact earlier, there is still research going on in this field. It is claimed that a wide range of working behaviour is affected by emotional intelligence such as teamwork, employee commitment, talent development, innovation, customer loyalty, etc. Some evidence from past researchers supports the role of emotional intelligence in organizational effectiveness.

- "If IQ has served as the main measure of intelligence in business over the past 20 years then . . . in the dawning twenty-first century it will be EQ" (Cooper & Sawaf, 1997, p. 27 cited in Zeidner et al. 2004)

– "In the corporate world . . . IQ gets you recruited but EQ gets you promoted" (Gibbs 1995; The Time article p. 59 cited in Zeidner et al. 2004)

– Based on research on 500 organizations by the Hay Group, a claim by Goleman (1995) has been that more than 85% ‘outstanding performance’ of leaders is based on their emotional intelligence instead of IQ. (Zeidner et al. 2004)

However, he did not cite any empirical data to support this claim. This thesis will continue to investigate the truth behind it by data collection and analysis from organizations and people.

Many studies have shown a positive relationship between EI and the work performance of employees in the service sectors (Wong & Law 2002; Law et al., 2004; Grobelny et al., 2021). Also, researchers agree with the result that leaders with high EI are better performers than their partners (H.M Alzoubi et al., 2022c; Van-Rooy et al., 2004; Carmeli et al., 2006; Rosete, 2007; Vela, 2023; Robinson, 2013; Plamer et al., 2003; Cooper, 1997)

2.5.2 Importance Of Emotional Intelligence For Virtual Teams

According to the authors (Coronado and Benítez, 2023), the aspects of emotional intelligence involve understanding the social context in such a way that allows to **detection** of nuances in emotional reactions as well as the ability of individuals to **utilise** the knowledge for influencing others on the level of controlling and regulating emotions. In this context, it can be said it is important to have the professional emotional intelligence to handle workflows and collaborate with the team members while performing jobs through virtual team arrangements. From a professional perspective, having professional emotional intelligence fosters leadership qualities within individuals.

It has been observed that emotional intelligence plays a key role in virtual teams. As opined by (Coronado and Benítez 2023), it has been observed that organisational roles are changing patterns over the years. It is being emphasised by organisations that leaders need to take on new roles such as facilitating and coordinating the behaviour of others in the workplace. Organisations need to attain and retain a sustainable competitive edge in order to develop and pay attention to human issues. In addition to this, many

employees need to work in teams to attain complicated organisational objectives as well as work groups. The analysis of the changing work environment within organisations reflects that emotional intelligence is important for managing relationships within teams. It has also been observed that leaders with effective cultural intelligence exhibit effective transformational leadership traits that help them to analyse their own behaviour. **Transformational leadership** is helpful in improving team motivation, effectiveness-related satisfaction and performance of team members. It has been observed that transformational leadership traits exhibited by emotional intelligence help leaders in moderating relationships among leaders reflecting emotional intelligence and efficiency in virtual teams. It has been observed that leadership, motivation and communication are some of the factors which are essential for virtual team projects. As opined by (Gamero *et al.*, 2021), in a computer-mediated work environment which is usually used in virtual teams, high and effective emotional intelligence among team members of virtual teams plays a key role due to the nonverbal and verbal emotional cues reduced in a computer-mediated work environment. On account of this, it has been observed that members of virtual teams pose poor emotional intelligence which makes it more difficult to manage and perceive the emotional experiences among members of virtual teams negatively impacting the well-being of the team members. This reflects the importance of emotional intelligence in virtual team projects.

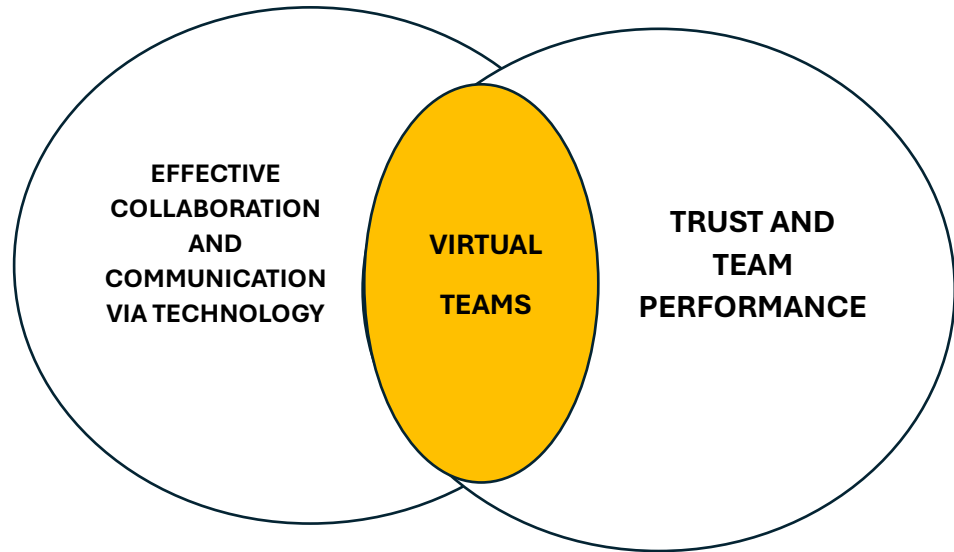


Figure 2. Communication and collaboration matrix (Source: Authors)

2.5.3 Impact Of Emotional Intelligence On Improving Job Performance On Virtual Teams

Emotional intelligence has abilities to impact job performance during job role management through virtual team arrangements. According to (Davai *et al.*, 2022), emotional intelligence has abilities to influence interpersonal occurrences in the workplace. It has been seen that in large organisational premises, there are numerous employees working where the chances of interpersonal conflicts are most. In a continuous process of teamwork, the rise of interpersonal conflicts could influence the productivity and efficiency of the job that has been handed over to the person or the staff. Apart from that, the author also indicated that cultural intelligence is another effective element of the personal attribute of individuals while accessing job roles in both virtual and traditional team settings. A person's ability to adjust to the situation is an important factor that needs to be fostered that enhances the sense of collaboration resulting in achieving goals in an efficient way (Davai *et al.* 2022). It can be said that emotional intelligence impacts personal occurrences.

(Warrier *et al.*, 2022), have justified the aspects of communication enhancements which can be achieved with the help of increased emotional intelligence. The very aspects of communication an important factor that impact performance and collaboration within the hierarchy and staff. In case communication is not maintained properly the team performance may not meet the level of satisfaction. In addition to that, the author has also indicated the aspects of decision-making where complete professional communication is urgent to be maintained. The more the emotional intelligence can be sharper the more the individuals will be able to communicate with others in an effective way that can assist the person in managing both professional and interpersonal relations resulting in a positive virtual team environment. *“Emotional intelligence acts as a moderator that affects the strength of the relationship between Virtual communication effectiveness and Decision-making”* (Warrier *et al.* 2022). As far as the question of decision-making goes during crisis moments, the need for emotional intelligence can be observed.

(Richter *et al.*, 2021), have indicated the aspects of cultural diversity within teams and the lack of face-to-face communication during the work operation through virtual team arrangements. In a workplace, there can be people from diversified cultures where aspects such as tone of communication, attitude and the way of interaction influence the results. In this context, the author has highlighted the aspects of emotional intelligence that help in fostering great relationships with a diversified group of people. Operating work through virtual team frameworks can also create pressure-creating situations due to increased workload. In these cases, it is important for both leadership and team members to communicate with their peers based on their actual psychological conditions. Here the application of emotional intelligence can be observed. In a concluding line, it can be said that the more the individuals can foster emotional intelligence the higher authorities of the organisation can create a positive and supportive workforce for the organisation along with the increased level of productivity resulting in enhanced competitive advantage for the organisation.

2.5.4 Communication as a Moderator in Virtual Team

Virtual teams are faced with challenges toward effective communication (Martins et al., 2004). Various challenges including a lack of knowledge sharing, limited communication, team members who lack self-management and virtual teaming experience compared to Face-to-face team members which allow direct and in-person interactions. Virtual team performance can be improved when virtual team members and leaders have high emotional intelligence (Quisenberry, 2018). Collaboration and communications are done in real-time without relying on digital tools of which Managers can pick up on team members body language, emotions expression, tone of voice i.e. the verbal and non-verbal cues which cannot be detected from a virtual communication channel for collaboration. Because both types of teams have their advantages and challenges. In virtual teams, there is flexibility in work hours and location, contributing to improved work-life balance as technology plays a vital role in managing virtual teams. Additional research shows absence of verbal and non-verbal cues in VPM results in reduced quality of communication (communicate less information) compared to F2F teams (Chidambaram 1996; Martins et al 2004). Virtual team members are recognized as having exceptional communication skills.

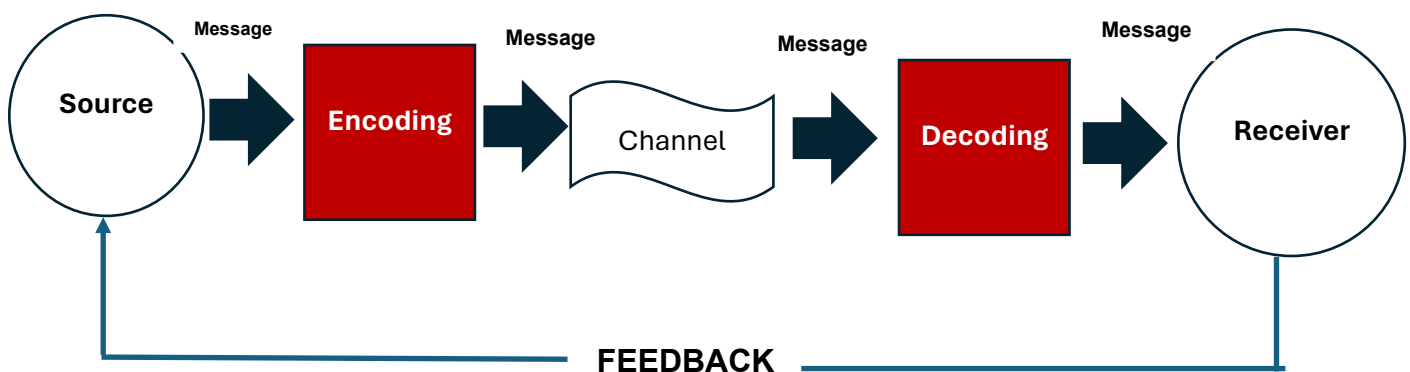


Figure 3. Communication Process

2.5.5 Emotional Intelligence and Work Performance

The concept of emotional intelligence (EI) was first proposed by Mayer and Salovey (1990), then popularized by Goleman. Emotional intelligence has been demonstrated in a manner that shows leaders' faith in others, feel good about themselves, and are willing to try new things, have a greater tendency complying to cultural approved norms, and can manage significant challenges and negative emotions. In such a process emotion plays a major role. They are as important as the cognitive skills of a leader or of an employee. For instance, leaders are constantly sending and receiving emotional messages and ultimately catch or adopt each other's emotions.

Emotional intelligence has been shown to be important for virtual team leaders, as they must effectively manage and inspire team members from a distance. Leaders with high emotional intelligence can establish clear goals, provide constructive feedback, and cultivate a supportive team culture, driving motivation, and productivity in virtual teams. Every Project leader aims to influence/lead the team in a more meaningful manner, increasing productivity.

A major advantage of Emotional intelligence according to (Salovey and Mayer, 1997) is that it monitors one own emotions and feelings, differentiate them, and using the knowledge to direct one's thoughts and actions. Our emotions have an impact on our thoughts and behaviours. Similarly, Salovey and Mayer 1990) defined Emotional Intelligence as the ability to monitor one's and others' emotions and feelings, discriminate among them and uses the information to guide one's thinking and actions (subset of social intelligence. Leaders and Team who can detect emotions in others, control their own emotion and handle social interactions well will have a powerful performance in the business world. (Goleman 2001, 1998) defined Emotional Intelligence as a person's ability to monitor one's emotions and self, the intelligent use of emotions in the way to improve individual behaviors, effectiveness and thoughts to achieve his/her goals. The capacity to effectively identify emotions and apply them in cognitive

processes, including reasoning, problem solving, and interpersonal communication (Brackett et al., 2011). The capacity to understand and regulate own emotions while also empathizing with the emotions of others, having a high EI isn't just beneficial; it is essential for building strong relationships, reducing stress within teams, resolving conflicts effectively and boost overall job satisfaction. In leadership roles, EI becomes more critical encompassing traits like empathy, social skills, self-awareness, self-regulation and motivation. Individuals with a high level of emotional intelligence make better virtual team member and virtual team leads. EI can contribute much to Job performance as more and more study connects it with the creation of strong bonds and interpersonal relationships among team in the workplace and successful results of an organization (Clarke, 2010; Rozell & Scroggins, 2010).

Work performance (WP) plays a very important role in the organization. It affects many personnel decisions such as promotion and employee retention, employee satisfaction and motivation. Schermerhorn (1989) defines WP as the quality and quantity accomplished by individuals or groups after completing a task. In today's technological advancement world, organizations need high-performing employees to reach their goals and achieve a competitive advantage. It encompasses various aspects of an employee's work, including the quality, quantity, timeliness, and effectiveness of their performance in fulfilling job-related requirements and achieving desired outcomes. Work performance is positively related to employees' emotional intelligence because employees/leaders with high emotional intelligence are more able to feel and regulate their emotions leading to a higher sense of confidence and control, leading to a high performance (Wong and Law, 2002; Law et.al., 2004). Grobelny et al., (2021) concluded based on self-reported ability that EI has the strongest relationship with job performance. Communication plays a vital role in job performance across various aspects of work. (Ghazal et al., 2023c) state that, Motivation has an indirect effect on

employee performance through job satisfaction. It also has the most important role in enhancing employee performance.

Scholars have subscribed to differing conceptualizations of the emotional intelligence (EI), there are four interrelated dimensions. The first is the appraisal and expression of self-emotions, the ability to recognize and understand one's emotions, whether positive or negative (Salovey and Mayer 1990). The second is the appraisal and recognition of emotions in others, the ability to perceive and understand others' emotions, being empathetic and able to put themselves in other shoes (Salovey and Mayer 1990).

The third interconnected dimensions of (Salovey and Mayer 1990) is the regulation of self-emotions, refers to ability to manage and regulate one's own emotions in various situations, control strong emotional states experienced at work such as anger, stress, anxiety, and frustration effectively. As a PM being able to make rational decisions during challenging situations, what those feelings indicate, and how those emotions impact their behavior and in turn, the feelings of their teammate at the workplace whilst maintaining a positive relationship.

The last dimension is the use of emotions to facilitate performance, this component involves harnessing positive emotions to inspire others and enhance performance (Salovey and Mayer 1990). For instance, Project Managers who can self-regulate their emotions and do not allow themselves to get overly angry or jealous and do not make rash decisions. They are able to think objectively before they act. Emotions and cognitions are interconnected.

To summarize this conceptualization, In a team, there may arise a negative emotional reaction, the Leader tries to understand the reasons for the reactions. Instead of the the leader being obsessed with blaming and reacting negatively, s/he should manage his/her anger to effectively solve the problem. EI allows leaders to use only emotions but also manage them

effectively (Zhuo and George, 2003). While some may think EI is innate, it can be learned through training, practice and feedback.

(Chin, 2001) suggests that the four dimensions of emotional intelligence; emotional recognition and expression, emotions direct cognition, emotional management and emotional control have demonstrated that emotional intelligence does enhance the performance of the business. These four (4) dimensions focuses on good communication with the colleagues, good teamwork spirit, conflict resolution and good problem-solving skills.

Table 4. Emotional Intelligence: Self-awareness and Reglation of others
(Source: Authors)

	Self	Social
Recognition (Who I am)	Self-awareness <ul style="list-style-type: none"> - Emotional mindfulness - Know your value and who you are as a leader. - Openness and Self-accepting - Self confidence 	Social Awareness/Skills <ul style="list-style-type: none"> - Empathy - Compassion - Work to understand others. - Be aware of Organizational culture
Regulation (What I do)	Self-Management <ul style="list-style-type: none"> - Self-control - Healthy work life balance - Be mindful of actions and thoughts. - Trustworthiness - Stress management. - Adaptability - Achievement drive 	Relationship Management <ul style="list-style-type: none"> - Communicate - Influence and Inspire - Good listener - Teamwork and collaboration - Building and maintaining relationships - Leadership

	- Initiative	- Openness to change. - Honesty
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Before digging into various perspectives and factors contributing to emotional intelligence and its importance, it is necessary to understand different aspects that are related to this concept. Numerous studies have been conducted about emotional intelligence in the past; nevertheless, the majority of them have reasons for stating the opposite. Many researchers support the idea of integrating emotional intelligence into the business sector. This section will go over definitions of terms related to the research issue as well as various viewpoints on emotional intelligence based on earlier research.

2.6 Findings

Managers emotional intelligence and their team members trust in them impacts Virtual Project team significantly. Since virtual teams do not communicate in person, trust and efficient communication are important to their efficacy and performance. In a team with an elevated level of trust, problems are resolved faster, conflicts are resolved, and decisions are made. Trust is essential for team cohesion, fostering group identification and facilitating productive communication among teams. Existing literatures supports that the transformative leadership style is particularly suitable for virtual teams using computer-mediated communication (Purvanova & Bono, 2009; Ruggieri, 2009). Additionally, researchers suggest that transformational leadership in virtual teams has a strong impact and that leaders who increase their transformational leadership behaviour in such teams achieve a higher level of team performance. What is required here is the ability to communicate and to have Emotional Intelligence.

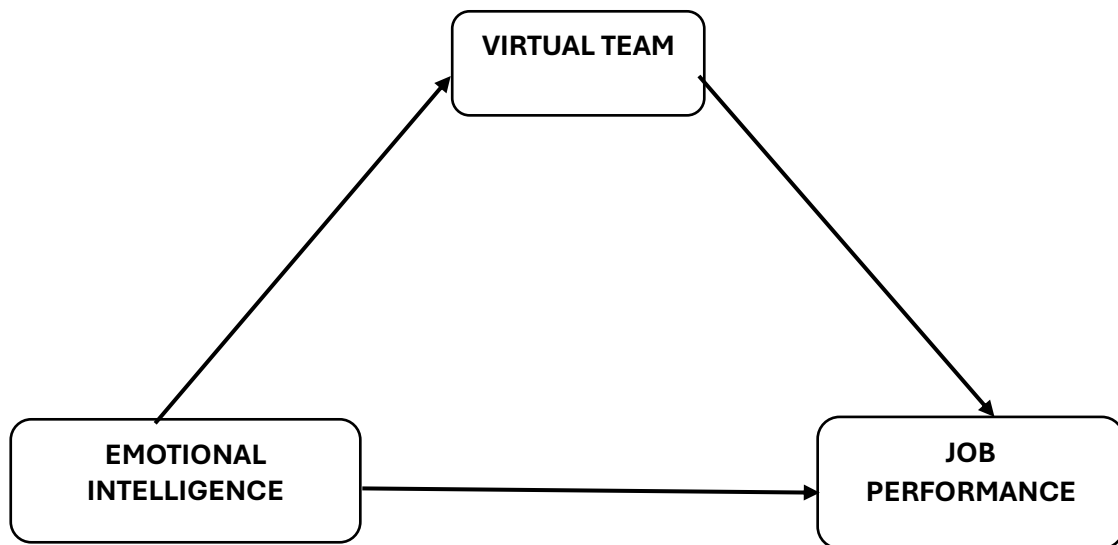


Figure 4. Finding of EI, VT and JP (Source: Authors)

The COVID-19 pandemic has forced many organizations to switch to remote work, which has transformed the traditional leadership and management practices. Emotional intelligence has been shown to be important for virtual team leaders, as they must effectively manage and inspire team members from a distance as work performance plays an important role in an organization. A review on Emotional Intelligence in VTs is therefore necessary and needs to be carried out in a timely fashion to serve its purpose. The findings intend to offer significant managerial proposals for enterprises and academia. By creating a team atmosphere that is characterized by trust, leaders of virtual teams

This research aims to provide a comprehensive yet succinct and timely knowledge map of the studies investigating Emotional intelligence, Job performance in VTs. Several existing studies have investigated the study in different business context. However, there are no study that understand the relationships from the perspective of bibliometrics. Such a knowledge map is purposed to provide scholars and businesses with an overview of what we know i.e. best practices and main findings, and what we still do not know i.e. future research directions about Emotional intelligence, Job performance and VTs.

3 RESEARCH METHODOLOGY AND LITERATURE COLLECTION

3.1 Bibliometrics Analysis

Bibliometric analysis emerged to be a crucial tool for measuring the scientific outputs of different scientific items (for example, , papers, authors, keywords, journals, institutions, and countries) in any research field and examining how the intellectual, social, and conceptual structure of the relevant field has evolved over time based on the relationships and interactions between these items (Donthu et al., 2021). A bibliometric analysis is a method for exploring and analyzing scientific data with the primary objective of presenting the scientific efforts made in studying a specific subject, often used to describe and predict tendencies for the upcoming years in specific research (Trejo-Castro et al. 2022). It is the process of obtaining various scientific outputs resulting from examining publications in a certain field or in a certain academic journal with the help of numerical analysis and statistics on some bibliometric indicators (number of articles per year, most studied topics, institutions with the most publications, top article in the field, authors with the most papers, number of citations and keywords) (Pritchard, 1969; Ellegaard & Wallin, 2015).

Bibliometrics can evaluate the main characteristics of scientific activities in the research field by applying statistical methods (Broadus, 1987). The objective of the bibliometric analysis is to provide a systematic and visualized overview of the existing publications (Garfield, 1979). It is also one of the appropriate data analysis techniques to investigate the field of Emotional Intelligence. Ideas and theories of bibliometrics have gradually become a valuable way for many scholars to open new academic research fields (Wang et al., 2021). Therefore, many advanced algorithms and sophisticated visual analysis tools have been developed to help scholars quickly perform bibliometric analysis.

In this study, two bibliometric tools Biblioshiny and VOSviewer, are visually analyzed. Bibliometrics is an open-source instrument based on R language

that performs comprehensive scientific mapping work, supporting a recommended workflow for bibliometric analyses. Biblioshiny is developed based on Bibliometrics using the shiny software package of the R language. Using this tool, we have completed most of the bibliometric part of this article, that is, the performance analysis and scientific mapping analysis of the collected publications to present the research and key theme and trend of the Emotional intelligence, Virtual Team and Job performance literature. In parallel, VOSviewer is a tool used to build and visualize bibliometric networks based on the Java environment (van Eck & Waltman, 2010). For example, it could build networks based on citations, bibliographic coupling, co-citation, co-occurrences or co-author relationships.

A unique feature of the bibliometric review is the ability to examine large data-sets that range in size from several hundred to tens of thousands of papers (Zupic & Cater, 2015). Bibliometric reviews use software programs to analyse “bibliographic data” associated with a set of documents to document trends in knowledge production and visualize underlying theoretical structures (Gmur, 2003; Zupic & Cater, 2015). Specifically, authors conducted a quantitative bibliometric analysis such as co-citation analysis, keyword co-occurrence analysis, and conceptual thematic mapping, as well as qualitative content analysis to explore the research questions (Bretas & Alon, 2021).

Two main analysis procedures are applied in bibliometric research (Cobo et al., 2011; Gutierrez-Salcedo et al., 2018): *Performance analysis* gives an overview of the field in terms of scientific outputs and *Science mapping* is a spatial representation of the relationship/interaction between authors, concepts (keywords), and citations (in terms of papers, journals, or authors) shown in Figure 5 below. To reveal and examine the relationship networks between the scientific items, co-author, co-citation, co-occurrence and bibliographic coupling analysis.

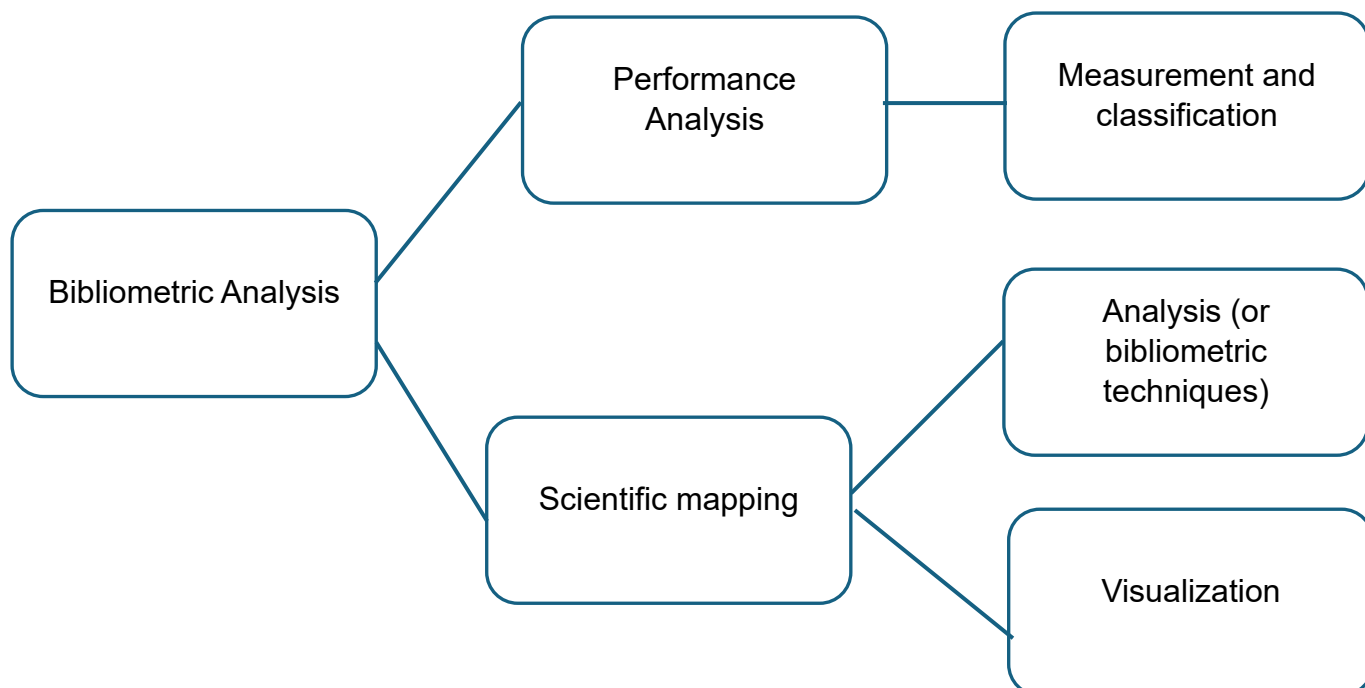


Figure 5. Analysis procedure in bibliometric research (Zupic & Cater, 2015)

Firstly, the authors measured the impact of the journals by retrieving data from Web of Science concerning the number of articles per journals and citations per article.

Secondly, to establish a general conceptual structure of the field, we analyzed the co-occurrence of author's keywords using VOSviewer software. Next, based on the authors' country, we plotted a conceptual map using biblioshiny (a tool for scientific mapping analysis that is part of the R bibliometrics package).

Indeed, the bibliometric analysis uses a set of quantitative methods to measure, map and investigate the academic literature, enhancing the review with quantitative data and indicators of bibliometric activity. It is noteworthy that the emergence of scientific database such as Scopus and Web of Science has made acquiring large volumes of bibliometric data relatively easy, and bibliometric software such as Gephi, Leximancer, and VOSviewer enable the analysis of such data in a very pragmatic way, thereby raising scholarly interest in bibliometric analysis in recent times.

In particular, a keyword analysis and searching was used for the literature review, while VOSviewer software was applied for following bibliometric analysis. There are many databases that provide datasets for bibliometric research (e.g., Wos, Scopus, Google Scholar, PubMed, Microsoft Academic, Dimensions, EmBase and Springerlink) (Cobo et al., 2011; Moral-Munoz et al., 2020). However, for this study, the data was collected from Web of Science (WoB) using Bibliometrix package based on R language and VOSviewer software to visualize.

Bibliometrix is a widely used R-package developed by Massimo and Corrado. It provides access to wide range of bibliometric functions and excellent visualisation tools. It provides a flexible and extensible free environment to conduct research and analysis. R's package ecosystem is one of the major advantages; packages are available for most widely used statistical, data analysis and visualization techniques. Bibliometric analysis is mainly used to determine research trends after crawling many publications (Xu & Wang et al., 2021; Wang et al., 2020b). The analysis presents a way to assess the development through a graphical representation.

VOSviewer is a tool used to build and visualize bibliometric networks based on citations, bibliographic coupling, co-citation, or co-authorship relationships. It focuses more on the geographical distribution of literature, especially the graphical visualization in geographic databases. Additionally, bibliometric analysis software was developed by Van Eck. VOSviewer is suitable for performance analysis to analyze countries collaboration, the network map of research distribution, and research hotspots through the keyword analysis (Li & Xu, 2021; Trianni et al., 2018). With the assistance of two visual analytic approaches, this study achieves an in-depth exploration of the intellectual structure of the core publications on the evolution of emotional intelligence, virtual team and job performance. VOSviewer and Biblioshiny software programs was selected, it can directly display visuals related to bibliometric analysis techniques without the need to perform extra analysis due to the advanced coding embedded within

them. Therefore, they provide significant convenience and advantages (Zupic & Cater, 2015):

- i) Papers can be exported from database as a file (data-set)
- ii) Visuals of the relationship networks between items can be easily generated
- iii) The visuals can be exported and saved in formats that can be used in the relevant research.
- iv) Similarity matrices between items can be calculated , without the need for manual processing/calculations.

The key feature of this software is the management of a large number of articles that are classified into clusters allowing better analysis and summary of the results of the literature review. Using VOSviewer to generate the keyword co-occurrence network visualization, each node in a network represents an entity author, country, institution, keyword, journal. In this case, a keyword wherein:

- a) the size of the node indicates the occurrence of the keyword (i.e the number of times that the keyword occurs)
- b) The link between the nodes represents the co-occurrence between keywords (i.e., keywords that co-occur together)
- c) The thickness of the link signals the occurrence of co-occurrences between keywords (i.e., the number of times that the keywords co-occur or occur together).
- d) The bigger the node, the greater the occurrence of the keyword.
- e) The thicker the link between nodes, the greater occurrence of the co-occurrences between keywords.

Each colour represents a thematic cluster, wherein the nodes and the links in that cluster can be used to explain the theme's (cluster's) coverage of

topics (nodes) and the relationships (links) between the topics (nodes) manifesting under that theme (cluster).

3.2 Literature Collection

WoS (Web of Science) is the most widely used and authoritative research literature search engine, covering key research results worldwide. Additionally, it has long been the most comprehensive citation data-source worldwide (Birkle et al., 2020). It is a multidisciplinary database containing more than 100 disciplines. It is also the most trusted and well-known global citation database of science globally, containing all languages and documents (articles, conference papers, books, abstracts of published projects, etc.). Detailed records of all aspects of published papers are kept by WoS (Khan, 2013). Among the resources currently available, many scholars and researchers use the WoS database as a data source for bibliometrics and literature analysis (He et al., 2017). The study reviewed relevant literatures through a database of Web of Science as a quality repository of academic intellectual work. The Web of Science is currently one of the most authoritative academic databases and could offer detailed information on relevant publications for the science mapping analysis (Qin et al., 2021), Web of Science database is known for quality.

The study employed the search strings of "Emotional Intelligence", "Virtual Teams", "Job performance" and "Organization" and it generated 12,912 academic works, which consist of journals, book chapters, proceedings paper and review articles. The retrieval function is as follows: Databases = Web of Science Core Collection; Search String = ("Emotional intelligence" OR "EI") AND ("global virtual team") AND ("job performance") AND ("company"). Authorshighlights the trends and measures researchers' contributions to the literature and favour a transdisciplinary approach which is the main goal of our study. In this sense, the current study is exploratory and descriptive research developed through an organised process for selecting and describing emotional intelligence paper dealings with virtual team organization and job performance. Authors performs a visual review

analysis and knowledge extraction of the literature related to emotional intelligence utilizing the two bibliometric tools, Bibloshiny and VOSviewer.

The initial data retrieved was subjected to inclusion and exclusion criteria. Data retrieved from Web of Science (WoS) database displayed 8,291 articles. This review presents a network analysis of the emotional intelligence, Virtual Team and Job Performance research domain utilizing VOSviewer software for bibliometric data mapping for the articles published from 2010 to 2024. Retrieval strategies are shown in Table 5.

Table 5. Retrieval Strategies of Main Information.

RETRIVAL TYPE	CONTENT
DATABASE	Web of Science Core Collection
SEARCH STRING	("Emotional intelligence" OR "EI") AND ("global virtual team") AND ("job performance") AND ("company").
DOCUMENT TYPE	"Articles"
LANGUAGE	English

3.3 A Step-By-Step Research Method

The framework of the step-by-step research method is depicted in Figure 1 above. Authors adopted a step-by-step research method to understand the knowledge pattern in Emotional intelligence and the multi-level connection between Virtual teams and Job performance. This article uses a bibliometric methodology to analyse related publications since this is a systematic review.

3.4 Result Of Bibliometric Analysis

Results of the study are presented in section, including performance analysis and mapping analysis. Performance analysis shows the development and distribution of emotional intelligence, virtual team and Job performance from research areas and Influential articles.

3.4.1 Annual Scientific Production

Metadata linked to the screened document list were extracted from WoB and stored in a comma-separated values (CSV) data file on April 14, 2024. This file comprised diverse document and citation details, including document title, publication year, journal details, affiliations, document language, authors name, country/region, abstract, article info, references, and keywords. This data served as the input for the subsequent bibliometric and science mapping analysis conducted using the VOS viewer software and Biblioshiny software (Van Eck & Waltman, 2022). As shown in Table 6, reporting the distribution of 8,291 articles on the timeline. The selected article was published between 2010 and 2024 (year 2024 was included, although still in progress). We addressed research question 1 regarding the key themes and trends in publication related to emotional intelligence, virtual teams, and job performance during the period of 2010 – 2024.

Over the period 2010-2024, 8,291 articles have been indexed in WoB database. The first article was published in 2010 and there has been an increasing trend in compliance with the academic research. The highest article production was recorded in 2023 with 1,044 (12.59%). 12.59% of all publication were conducted in 2023 as shown in Table 6.

Table 6: The number of published articles between 2010 and 2024

YEAR	ARTICLE	MEAN TC PER YEAR	CITABLEYEARS	MEANTC PERART
2010	208	3,52	15	52,85
2011	225	3,04	14	42,49
2012	265	3,66	13	47,60
2013	247	3,48	12	41,75
2014	299	3,27	11	35,92
2015	424	2,91	10	29,13
2016	483	2,93	9	26,34
2017	516	2,64	8	21,11
2018	613	2,51	7	17,56
2019	699	2,65	6	15,91
2020	861	2,61	5	13,03
2021	919	2,04	4	8,16
2022	1065	1,42	3	4,27
2023	1144	0,78	2	1,57
2024	323	0,48	1	0,48

Moreover, result shows that more article was published in the 2023 and 1,065 articles in 2022. The journal with the highest number of publications is Frontier in Psychology. There is an increase in publication activities every year, the trends from 2010 to 2024 increases and 2023 has the highest record while 2024 is still in progress- this metric is based on the assessment criteria on the number of articles published yearly.

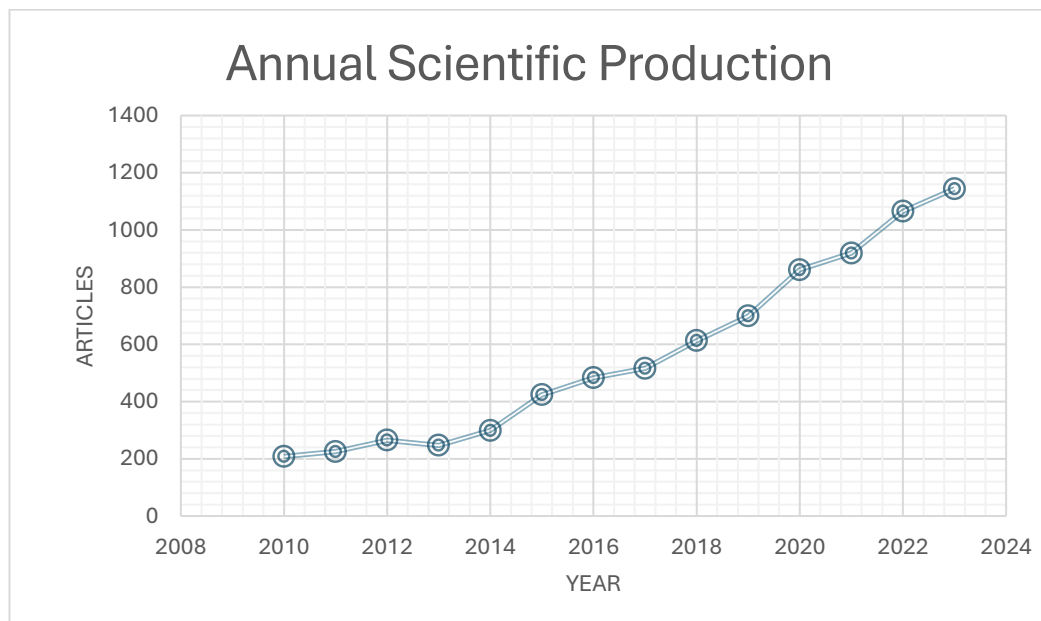


Figure 6. Research Publication Years (2010 – 2024)

April 2024 is 323; to make the chart more illustrative, authors did not include the publication number of 2024. However, academic research on Emotional intelligence has gained significant attention. The growth in publications in 2022 and 2023 in publications is likely due to COVID-19, with the number of publications peaking in 1065 and 1144 respectively and a likely increase in research trends likely to be seen in 2024. The global outbreak of the COVID-19 pandemic in 2020 has led to the widespread adoption of virtual environment solutions to support geographically dispersed project teams Figure 6 signals a robust momentum in the research. There has been a significant increase in interest in emotional intelligence in project management in recent years, emphasizing the long-term perspective for project success.



Figure 7. Thematic evolution map

Figure 7 is a thematic evolution map that indicates the evolution of author keywords in two distinct stages (2010-2020 and 2021-2024). As of 2010 to 2020, the keyword that most appeared was “Intelligence”, “emotional intelligence”, “social cognition” and “psychopathy”. At the time when the research on the subject was evolving and being more numerous, it began to diversify, generating more keywords. An important keyword is

“psychopathy”, “intelligence”, “emotional intelligence” as this shows up in the two stages.

3.4.2 Keyword Co-Occurrence Network

The keywords of the literature are the core viewpoints. For this purpose, keyword co-occurrence analysis was employed which is a technique for examining the content of the publication by extracting keywords from the full text of the publications. Keyword co-occurrence analysis can be used to predict future research in the field with a view to enriching the study as interpretation of co-analysis (in the past) or bibliographic coupling (in the present) and predicting the development of the field (in the future). According to the co-occurrence intensity are gathered to form a cluster (Edwards & Cavalli-Sforza, 1965). The authors analyse the co-occurrence relationship and intensity of a group of word pairs in the literatures. It refers to the specific statistical correlations between different search strings or keywords that appear in the same document. It reveals the hot spot, frontier, and development trend of this research field. A keyword co-occurrence network shows the relationship between these keywords in form of a network diagram. The closer the distance between certain keywords, the more relevant they are on the map. Additionally, the bigger the node, the bigger the influence of the author. These more relevant strings form a cluster that can be used to describe a core topic of research. The authors used VOSviewer to build string co-occurrence networks that reflect the state of the research. Based on the density distribution map of these keyword map, authors can identify the most popular research topic and research trends over time. Table 7 shows the top 10 keywords. In addition, to obtain more accurate results, less relevant keywords were not included and a minimum number of occurrences of keywords of one was set as a threshold level. Because the frequency alone cannot reflect the core topic distribution and the relationship between keywords, authors constructed strings co-occurrence networks based on the keywords of publications. A series of topic analysis can be conducted through the keyword co-occurrence map.

The network visualization was constructed based on the co-occurrence frequency of 14413 retrieved keywords as shown in Figure 8.

Table 7. Top 10 Keywords

KEYWORD	OCCURRENCES	CLUSTERS	TOTAL LINK STRENGTH
Emotional Intelligence	3960	1	8181
Trait Emotional Intelligence	269	1	598
Empathy	255	1	610
Leadership	250	1	559
Personality	231	1	966
Resilience	193	1	568
Job Satisfaction	180	1	441
Stress	175	1	542
Burnout	173	1	814
Depression	165	1	888

Using VOSviewer to generate the network visualization of the keyword co-occurrence network, each frame in the co-occurrence network has a colour that depends on the network of the items at that point. The size of the label and the circle of an item is determined by the weight of the item. The higher the weight of an item, the larger the label and the circle of the item. The keyword with the highest number of occurrences is as shown in Figure 8: “Emotional intelligence” being the most visible keyword on this visual map. Other easily pointable keywords on this map include “*Social recognition*”, “*Theory of mind*”, “*Psychological well-being*”, “*University students*”, “*Cognition*” and “*emotion recognition*”. These keywords provide a quick overview of the thematic context of research efforts. The larger the node, the more times the keyword appears. The connecting line represents the relationship between the nodes using different colours to represent the

Emotional Intelligence literature is advancing in different research domains, and its impacts on and application to real-life situations are remarkable. EI involves recognizing and managing own's emotion and the emotions of others which encompass skills such as empathy, self-regulation, social skills, and emotional perception. Individuals discuss them using different keywords such as "Personality", "stress", "Leadership" and "Health". For long, there was a divided opinion about Emotional Intelligence, but surprisingly, despite the prolonged divided views, publication, citation, and readership of EI is increasing as shown in Table 7.

Fourteen years ago, emotional intelligence as a concept from organizational and psychology research while there was a debate about the degree to which EI is innate versus learned. Scholars agree that it is a skill that can be developed and improved over time through trainings and practice. There is an emphasis on its significance in various aspects of life, including workplace, leadership effectiveness, mental well-being, Job performance and personal relationship. Research shows that "Individuals with higher emotional intelligence tend to have a better social relationship, cope with stress more effectively, and perform better in leadership roles.

Another important piece of information is to capture the trending topics. In Figure 9, the development of research articles overtime is illustrated in terms of keywords. Although the article published over the period 2011 to 2022 concentrated on dimensions of emotional intelligence, such as social recognition, personality, behavioural genetics and leadership, the focus shifted to keywords such as "artificial intelligence" and "perceived" in parallel with the global problems in current publications. The results shown in Figure 9 indicate that the actual trends are as follows:

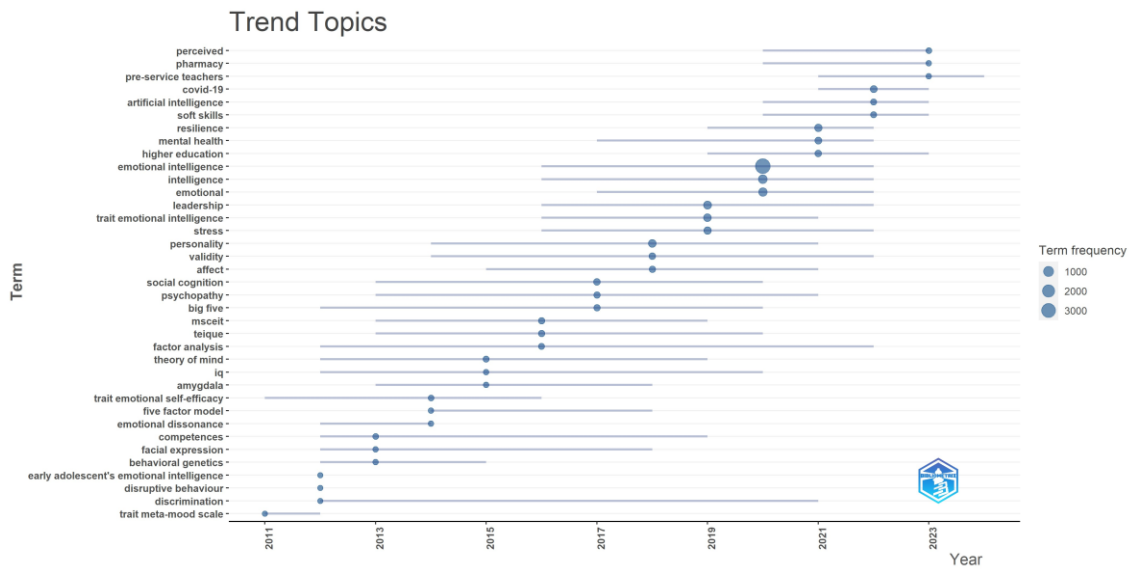


Figure 9. Keyword Trend topics

Scientific mapping techniques consist of thematic maps that depict the conceptual structure of a particular research domain (Figure 10). The thematic map consists of a network analysis of word occurrences to explain what science is saying in a field, key themes, and patterns. Density is used to measure the consistency between nodes and centrality is used to measure the degree of correlation among different subjects.

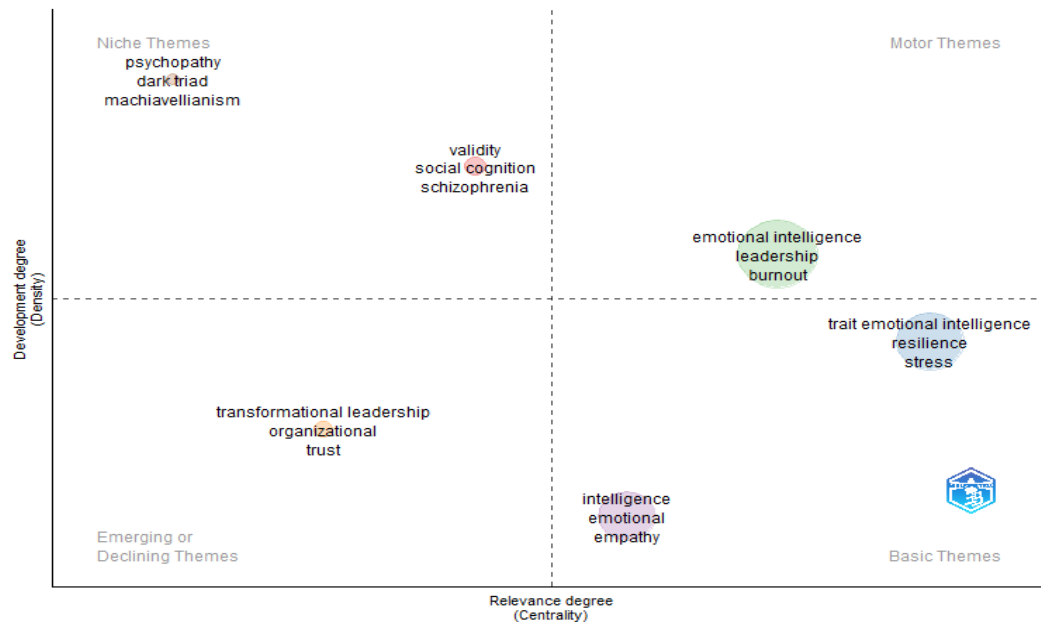


Figure 10. Keywords thematic map

Most studies and citations on review belong to keywords in the Motor theme group. Although validity, social cognition, schizophrenia, are considered highly advanced but Niche Themes, they have high centrality and low density. psychopathy, dark triad and Machiavellianism (low centrality and low density). Although the keywords in this group have been more productive in previous years, their connection to the subject has weakened over time. The word “Transformational leadership”, “Organizational trust” belongs to the emerging theme group represented by high centrality and low density. The connection of this keyword with other words and its relevance to other words are high. Trait emotional intelligence, Intelligence, empathy, and resilience are the basic themes with high density and high centrality. Keywords in this group have a high internal connection.

3.4.3 Country and Institution Distribution

An analysis of the country distribution research can help to comprehend a country's capacity and explore capacity differences among. In bibliometric analysis, country and institution are important analytical variables which shows the authors' country-based affiliation. By analyzing the citation and co-citation of publications from different countries and institutions, we can gauge their collaborative networks. The bibliometric coupling analysis of countries shows the effectiveness of the United State of America and Spain in the field of emotional intelligence, virtual teams, and Job performance. From the data obtained from the WoS database, we found that the 8,291 publications were distributed among 128 countries, and Table 8 shows the top 20 countries with the highest number of publications ($n = 7,862$). 129 met the thresholds. Additionally, we selected the minimum number of documents of a document to be one in VOSviewer to obtain the maximum number of links generated between countries. The United States ranked first with 1,844 documents/publications accounting for 22.24% of all publications far ahead of other countries and has the highest number of collaborations with other nations followed by Spain and China. Spain stands as the runner-up 13.15%, followed by China 9.91%. From an objective standpoint, USA's leading position in publication volume can be attributed to two main factors.

Firstly, the USA actively engages in international research collaboration, partnering with institutions and researchers from around the world. This collaboration enhances the quality and impact of publications while promoting the exchange of knowledge and expertise on a global scale. Secondly, publications originating from the USA often have a substantial impact in terms of citations, influence on policy and practice, and contributions to advancing scientific knowledge. Leading universities, research institutions, and think tanks in the USA are frequently cited and recognized for their ground-breaking research.

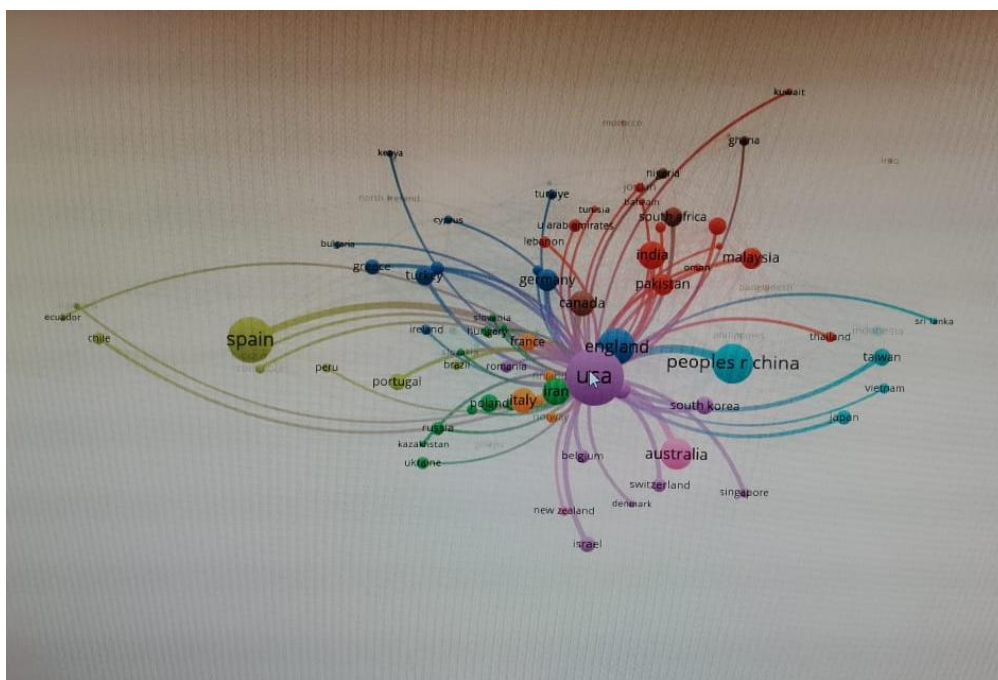


Figure 11. Geographical distribution Network across different countries between 2010 and 2024

Similarly, China has implemented ambitious initiatives to promote research and innovation, including significant investments in R&D, funding programs, and incentives for researchers. These policies have fuelled the rapid expansion of China's research output and its emergence as a global leader in several scientific and technological fields. As for Spain, researchers actively engage in international collaboration, partnering with institutions and researchers from around the world. Collaborative projects contribute to

the visibility and impact of Spanish publications while facilitating the exchange of knowledge and expertise.

Table 8 displays the top 20 countries in terms of publication output. It is notable that the top three prolific countries (USA, Spain, and China). Furthermore, the analysis reveals that the top 20 countries account for 43.15% of the total article.

Table 8. The top twenty countries between 2010 to 2024 (n= 8,291)

COUNTRY	DOCUMENTS	CITATIONS	LINK STRENGTH
USA	1,844	45,383	822
Spain	1,091	16,185	451
Peoples R China	822	12,710	460
England	719	17,232	644
Australia	518	14,321	351
India	389	2,822	127
Iran	376	2,409	88
Canada	336	8,226	268
Italy	319	5,818	216
Germany	239	5,065	225
Malaysia	215	1,904	182
Pakistan	210	1,915	173
Turkey	178	1,951	58
Netherlands	169	7,025	193
South Africa	165	1,569	93
Poland	162	2,244	78
South Korea	160	2,574	98
France	144	3,386	188
Taiwan	138	2,435	66
Portugal	137	1,587	114

The worldwide scenario is led by the USA with 1,844 publications (22.24%). The USA made an outstanding contribution as the USA attaches great importance to Emotional Intelligence. Subsequently, the Spain (1,091 publications), China (822 publications), England (719 publications), Australia (518 publications), India (389 publications), Iran (376 publications), Canada (336 publications), Italy (319 publications), and

Germany (239 publications) constitute the top 10 most productive countries/regions.

To analyze the international collaboration rate, publications were classified according to country of affiliation of the corresponding authors (CA). Records of the publications with a CA of each country were classified as single country publication (SCP) or multiple country publication (MCP) and is calculated using Biblioshiny software as shown in Figure 12. Studies from USA explores the potential benefit of emotional intelligent such as empathy and self-regulation affect team communication, cohesion and productivity to virtual team members and understand how those with higher EI can improve project success (Quisenberry, 2018). USA has more MCP and SCP. USA has a significant influence on global research trends and initiatives.

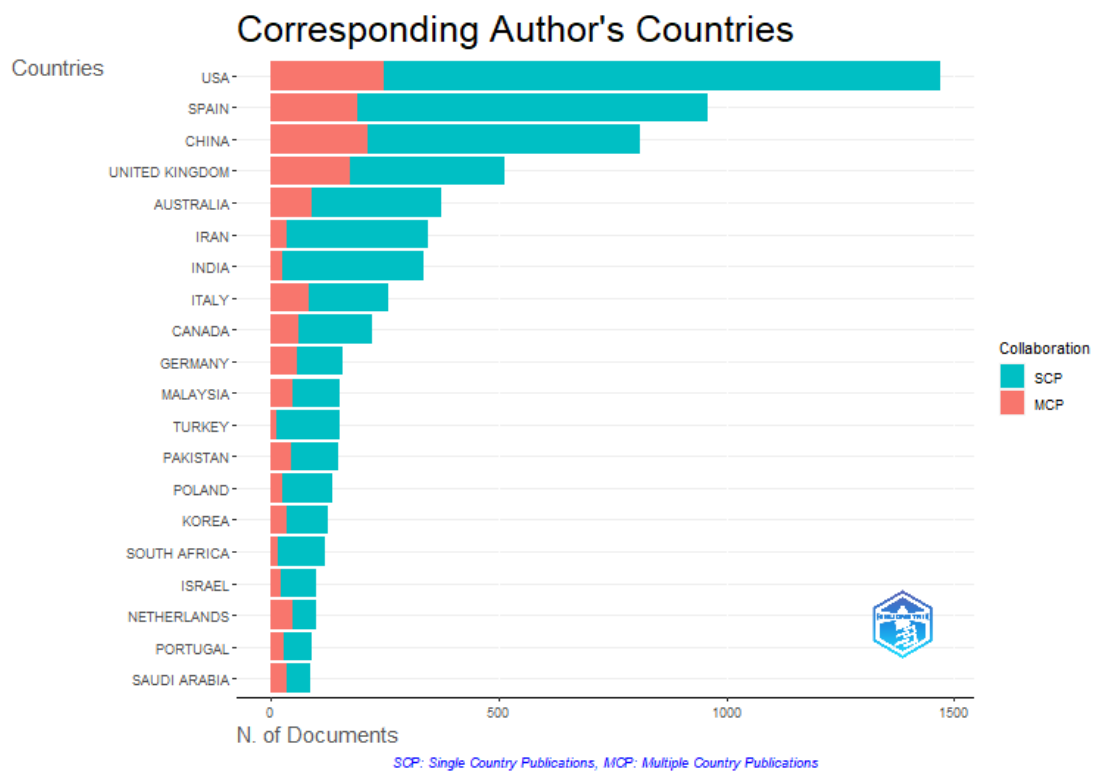


Figure 12. Author's Cross-Country Collaboration

Another important aspect that was examined in this study is the extent of research collaboration among the countries. As shown in Table 9, the region exhibits a modest collaboration in the field. USA have the highest number of countries they have collaborated with (5 of 5 countries). It is followed by

Spain (3), United Kingdom (1) and China (1). In terms of number of collaborative researches, the USA posted the greatest extent of collaboration with China, United Kingdom, Canada, Spain and Australia. Regarding the country-specific productivity in the context, the United States of America (USA) led other countries with close collaboration with China and others like UK, Canada, Spain, and Australia forming one cluster. USA has collaboration with all the countries including Finland and Nigeria. China led another cluster with a strong network with Australia and UK. Another cluster shows UK with Australia. Spain with Chile and United Kingdom (UK). For easy identification, each cluster demarcates with a unique colour. The beautiful thing about Figure 13 is the interconnectedness of all the countries.

Table 9. Global Collaboration between 2010 and 2024

S/N	FROM	TO	FREQUENCY
1	USA	CHINA	104
2	USA	UNITED KINGDOM	78
3	USA	CANADA	69
4	USA	SPAIN	55
5	USA	AUSTRALIA	54
6	CHINA	AUSTRALIA	52
7	UNITED KINGDOM	AUSTRALIA	50
8	SPAIN	CHILE	49
9	SPAIN	UNITED KINGDOM	49
10	CHINA	UNITED KINGDOM	47

The colours on the map shows the intensity level of the relationship (light colour indicate weak relationship, dark colours indicate strong relationship, Gray colour indicates no relationship) (Figure 13). Upon the evaluation in terms of country connections, the countries with the strongest connection are USA and China, each with 140 frequency links. The fact that the link strength rank first among these countries also has a direct impact on the number of publications conducted by the countries. The intercountry connection map illustrated in Figure 13. USA, as one of the most active

countries has collaborations with United Kingdom (78), Canada (69), Spain (55), Australia (54), Korea (43) respectively. Five different strong collaborations (with China, UK, Canada, Spain and Australia) have been established. Despite the different languages spoken by the contacted countries, USA scholars are more likely to establish multinational partnerships.

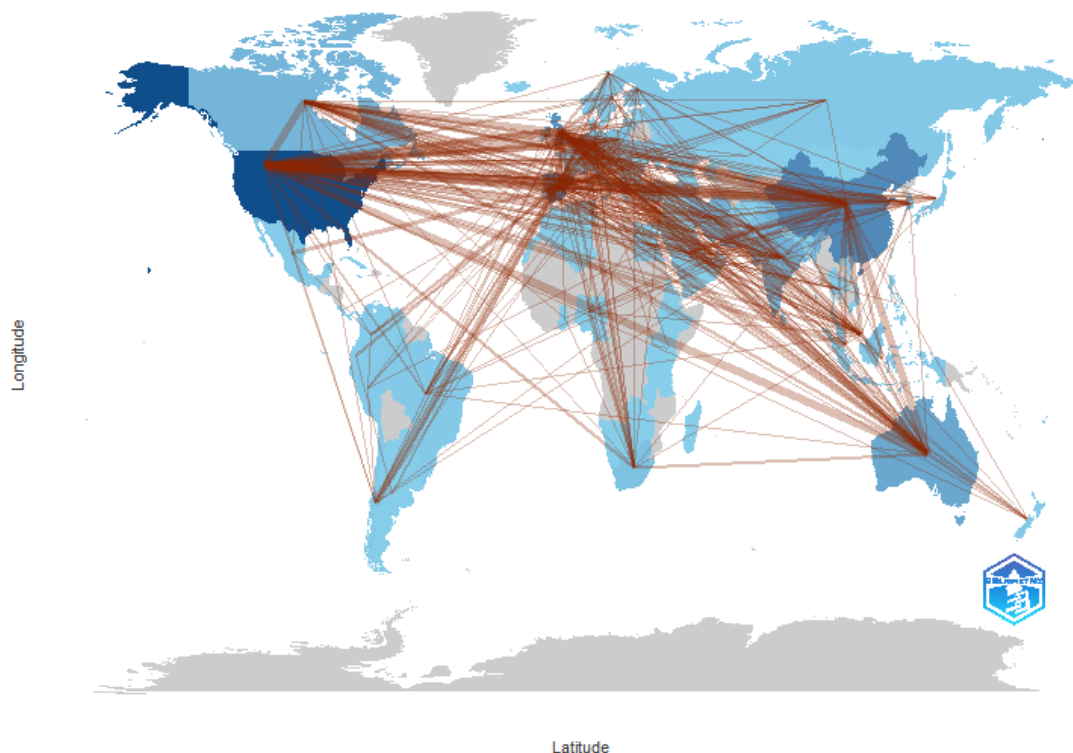


Figure 13. Collaboration World Map between 2010 and 2024

A statistical analysis of authors' affiliations reveals that a total of 6,465 institutions, including universities, research institutes, and enterprises have published articles on Emotional intelligence, virtual team, and Job performance. Figure 14 illustrates the research institutes that have contributed three or more articles and collaborations between them. The size of the nodes represents the number of articles, the link between the nodes shows institutional collaborations. University of Malaga from Spain stands out as the top contributors in terms of article volume. In terms of cooperation, researchers from institutions such as University of Nicosia and

Psychiatric Hospital Cross in Cyprus and Lebanon respectively engaged in multiple collaborations. Besides, many other similar institutional collaborations can be traced from Figure 14.

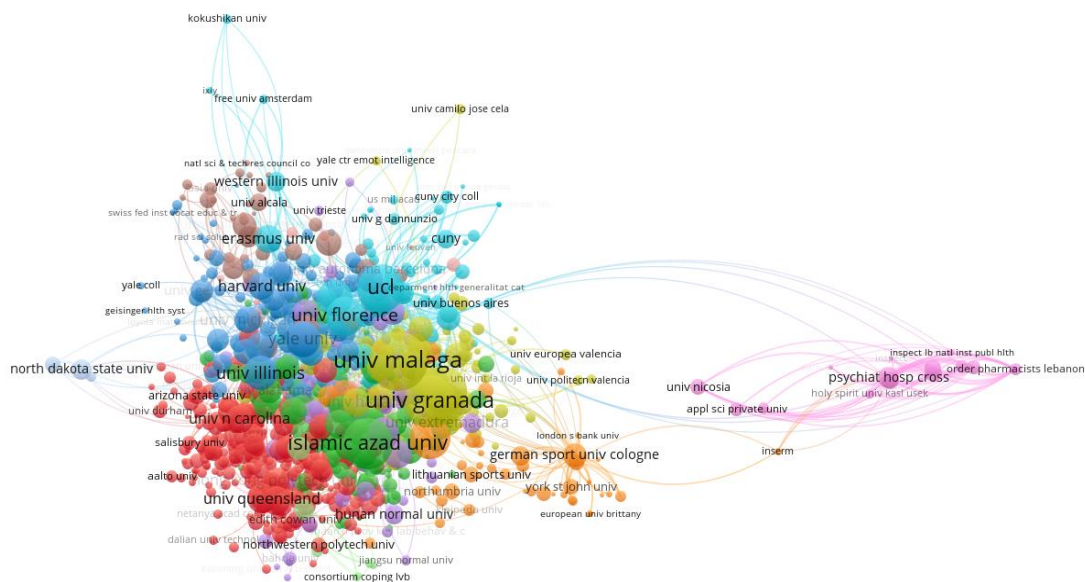


Figure 14. The key contributing institutions

Table 10. Top 10 relevant Institutions

RANK	INSTITUTION	LOCATION	NUMBER OF ARTICLES
1	UNIVERSITY OF MALAGA	Spain	336
2	UNIVERSITY OF GRANADA	Spain	249
3	ISLAMIC AZAD UNIVERSITY	Iran	235
4	UNIVERSITY OF VALENCIA	Spain	185
5	UNIVERSITY OF ALMERIA	Chile	180
6	UNIVERSITY OF JAEN	Spain	167
7	UNIVERSITY OF FLORENCE	Italy	138
8	UNIVERSITY OF ALICANTE	Spain	112
9	UNIVERSITY OF ILLINOIS CHICAGO	USA	107

10	BEIJING NORMAL UNIVERSITY	China	102
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Table 10 shows the bibliometric coupling analysis of the 20 most active sources, total citations and their total link strength. 20 sources contributed to 28,781 citations. *Frontiers in Psychology* (380 publication) is the most significant documents. It is followed by *Personality and Individual Differences* (299) and *International Journal of Environmental Research and Public Health* (185). The top 20 sources contributed 1,679 publications, judging from the number of citations, the most cited is the *Personality and Individual Differences* (11,155 citations), followed by the *Frontiers in Psychology* (5,679 citations) and *International Journal of Environmental Research and Public Health* (2,514 citations). To some extent, information about the research institutions where authors are located also implies a good research environment for researchers is good.

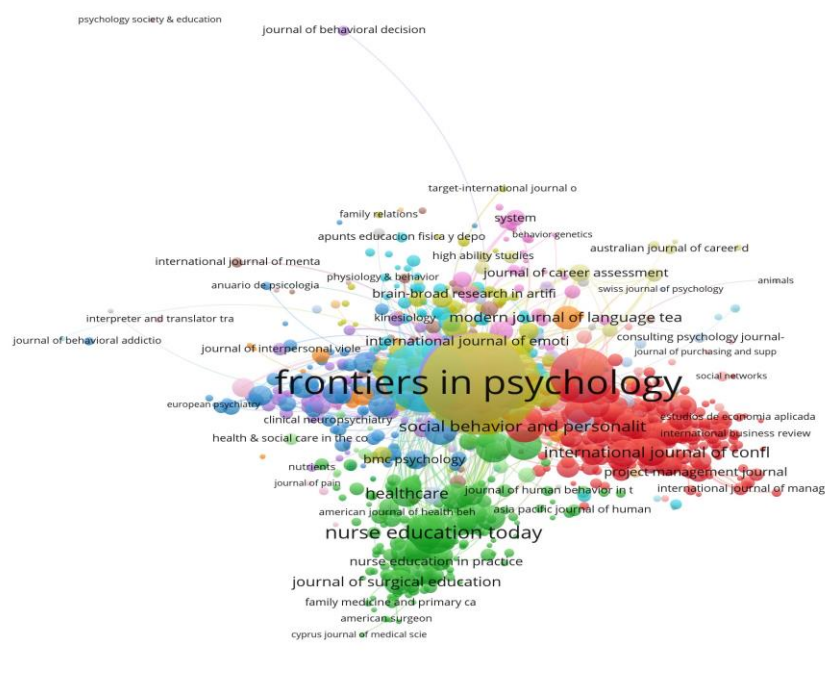


Figure 15. Sources collaboration network between 2010 and 2024

The higher the number of articles and citations a journal published, the more effective it becomes. Therefore, the number of documents, the number of citations and the link strength associated with the citations of the journals are analyzed. Table 10 presents the list of top 20 effective journals by the number of publications.

A total of 8,291 articles produced over the period 2010 – 2024 have been published in 2,379 different sources. Upon comparing the sources by the number of publications/documents produced (380) and citations (5,679), Frontier in psychology ranks first. The total link strength of the journal is 3,539. The journal constitutes 15.97% of all sources. The frontier of Psychology owned by gold, Green published. Upon examining the top 10 sources, 8 of them are those of Gold, Green published. The two other journals belong to Bronze. These number indicates the dominance of Green publish. The ranks of publications and citations In the list tends to differ. For instance, Frontier in psychology, ranks first in terms of number of document and rank 2nd with 5,579 citations. Culture and Psychology, which ranks fourth in terms of number of documents, ranks 27th with 820 citations. All journals on the list have been published in English.

Table 11. The most productive Journals between 2010 and 2024

RANK	SOURCES	DOCUMENTS	CITATIONS	TOTAL LINK STRENGTH
1	Frontiers In Psychology	380	5,679	3539
2	Personality And Individual Differences	299	11,155	4167
3	International Journal Of Environmental Research And Public Health	185	2,514	1623
4	Culture and Psychology	136	820	846
5	Sustainability	110	1,041	835
6	Plos One	71	1,674	478

7	Nurse Education Today	61	1,610	746
8	Bmc Medical Education	42	882	322
9	Psychological Reports	42	324	324
10	Social Behavior And Personality	39	563	283
11	Behavioral Sciences	37	205	365
12	Journal Of Psychoeducational Assessment	34	815	450
13	Journal Of Psychology In Africa	34	197	114
14	Journal Of Intelligence	33	100	361
15	Psychology Research And Behavior Management	33	267	342
16	Sage Open	31	249	238
17	International Journal Of Early Childhood Special Education	29	18	59
18	Heliyon	28	104	242
19	International Journal Of Conflict Management	28	483	170
20	Healthcare	27	81	3539

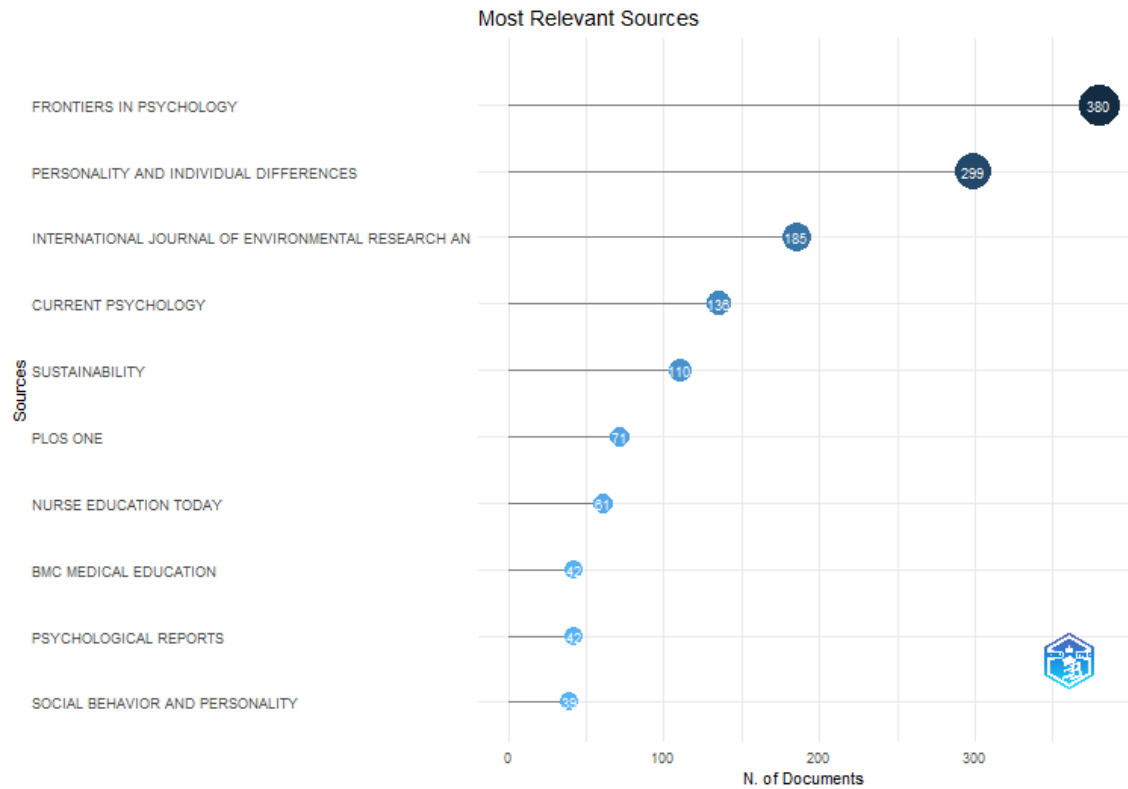


Figure 16. Most Relevant Sources between 2010 and 2024

3.4.4 Most Influential Publications

The article with the highest number of citations, DOI number, authors, publication year, total citations, average citation data are listed in Table 12. The pioneering study in terms of the number of citations (1,262) was conducted by Gignac GE et al., in 2016 and published in the Journal of individual differences. This study concentrated on self-esteem, emotional intelligence, academic performance, Big 5, Gender differences, Job satisfaction, Behaviour, comprehensive meta-analysis, and predictive-validity. Moreover, the research study with the highest annual average citations is also this study. The next prominent author Bernerth published with personnel psychology with 975 citations and 108.33 average per year. There is a high margin between productivity of the first and second author.

Table 12. Most global cited documents

Paper	DOI	Total Citations	TC per Year	Normalized TC
GIGNAC GE (2016), PERSONALITY AND INDIVIDUAL DIFFERENCES	10.1016/j.paid.2016.06.069	1262	140,22	47,91
BERNERTH JB, (2016) PERSONNEL PSYCHOLOGY	10.1111/peps.12103	975	108,33	37,02
DE WIT FRC, (2012) <i>J. APPLIED PSYCHOLOGY</i>	10.1037/a0024844	763	58,69	16,03
CREDE M, (2017), JOURNAL OF PERSONALITY AND SOCIAL PSYCHOLOGY	10.1037/pspp0000102	693	86,63	32,82
O'BOYLE EH, (2012), JOURNAL OF APPLIED PSYCHOLOGY	10.1037/a0025679	682	52,46	14,33
VAN DEURSEN AJAM, (2015), COMPUTER IN HUMAN BEHAVIOUR	10.1016/j.chb.2014.12.039	623	62,30	21,38
O'BOYLE EH, (2011), JOURNAL OF ORGANIZATIONAL BEHAVIOUR	10.1002/job.714	562	40,14	13,23
MAYER JD, (2016), EMOTIONAL REVIEW	10.1177/1754073916639667	531	59,00	20,16
JUDGE TA, (2015), ACADEMY OF MANAGEMENT JOURNAL	10.5465/amj.2010.0837	384	38,40	13,18
KRAUS MW, (2010), PSYCHOLOGICAL SCIENCE	10.1177/0956797610387613	383	25,53	7,25
DEMING DJ, (2017), QUARTERLY JOURNAL OF ECONOMICS	10.1093/qje/qjx022	363	45,38	17,19

BATT-RAWDEN SA, (2013), ACADEMIC MEDICINE	10.1097/ACM.0b013e318299f3e3	361	30,08	8,65
VACCARO IG, (2012), JOURNAL OF MANAGEMENT STUDIES	10.1111/j.1467-6486.2010.00976.x	345	26,54	7,25
WANG Y, (2021), FRONTIERS IN PSYCHOLOGY	10.3389/fpsyg.2021.731721	343	85,75	42,02
MULLER R, (2010), INTERNATIONAL JOURNAL OF PROJECT MANAGEMENT	10.1016/j.ijproman.2009.09.003	339	22,60	6,41
VAN DER LINDEN D, (2010), JOURNAL OF RESEARCH IN PERSONALITY	10.1016/j.jrp.2010.03.003	337	22,47	6,38
VAN MOL MMC, (2015), PLOS ONE	10.1371/journal.pone.0136955	337	33,70	11,57
EBY LTT, (2013), PSYCHOLOGICAL BULLETIN	10.1037/a0029279	329	27,42	7,88
SOMECHA A, (2013), JOURNAL OF MANAGEMENT	10.1177/0149206310394187	324	27,00	7,76

3.4.5 Co-Citation and Co-Authorship

In this analysis, it is important to understand how scholars interact among themselves (including associated author such as affiliated institutions and countries). Collaborations among scholars can lead to improvements in research- for example, contributions from different scholars can contribute to greater clarity and rich insights. Here, scholars that collaborate forms a network as shown in Figure 17 below.

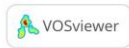
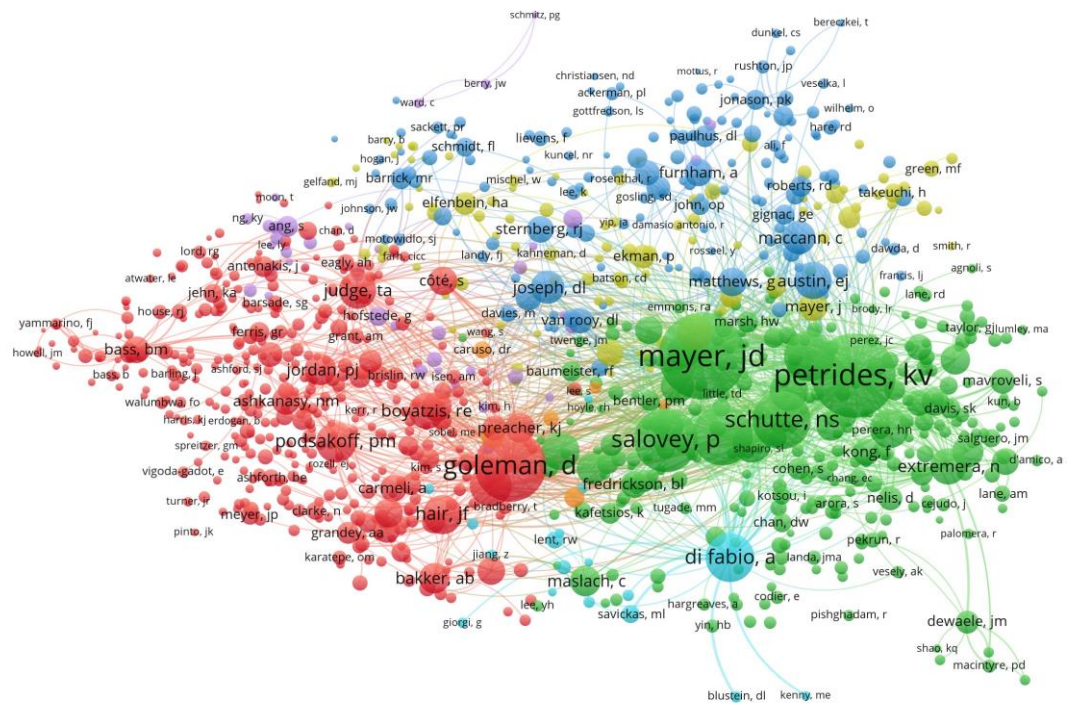


Figure 17. Co-citation network between 2010 and 2024

The co-citation analysis is a powerful tool to investigate the foundations of the research through analysis of the references cited by the papers in our data set. The analysis reveals those that are the most cited authors. Co-citation analysis, conducted in VOS viewer version 1.6.20 (Van Eck & Waltman, 2022), first examined the frequency with which authors had been cited in the “reference lists”. This approach offers access to a wider literature than is possible with citation analysis, which is limited to the analysis of the review documents themselves. By performing the co-citation analysis, we can identify the 10 most cited journals, authors that constitute the theoretical pillars of the research. This method is used for identifying the theoretical literature that underpins research strings (Zupic & Cater, 2015).

In a second step, VOS viewer software tracked the number of citations with which pairs of scholars were cited in the same reference lists. Mayer, was referenced (4283), Petrides (4038), Goleman (2885), Salovey (2300), and Bar-on (2061). These authors being the top 5 co-cited authors. The research

threshold of 1 citation was selected meaning to include on the map all authors who had been cited at least one time. The authors with the largest node are associated with the most frequent co-cited authors as shown in Figure 17. The authors are represented in seven different clusters as shown below.

Co-authorship is used to analyze co-signatures of authors (**Figure 18**). If two authors collectively produce a published article, they are considered to have a mutually collaborative relationship. Such information can also assist researchers seeking potential collaboration, and publishers can also utilize authorship findings to form editorial teams. The network of professional being created is becoming increasingly intense so researchers need to conduct more specialized studies and connect with authors who have had a greater influence on research.

In co-authorship analysis, the authors are represented in 24 different clusters with 828 links. Upon ranking the authors by the number of links, Extremera Natalio with cluster 15 (sky blue) and 129 total link strength ranks first. This author has published 75 documents and has cited 2126 different authors from different clusters on the topic.

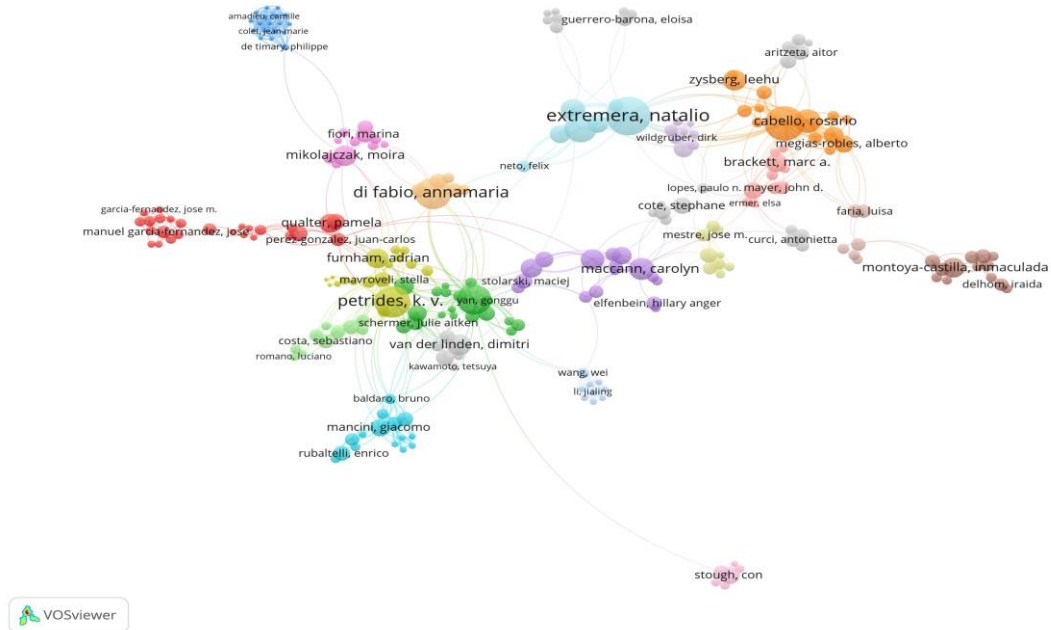


Figure 18. Co-authorship network map

The top 10 authors with the highest number of publications among 22,337 authors are presented in Table 13. Furthermore, the total link strength of all the authors listed in Table 13 are not sufficient. Upon analysis, Extremera from University of Malaga, Spain rank first with 75 research articles on the subject. The author who conducted the first highest publication in 2010 (Petrides, K.V), ranks first in the total number of citations and fourth in the total number of published articles.

Table 13. The most productive authors.

AUTHOR	DOCUMENTS	CITATIONS	TOTAL LINK STRENGTH	
Extremera, Natalio	75	2126	129	
Fernandez-Berrocal, Pablo	60	1993	128	
Di Fabio, Annamaria	51	2235	50	
Petrides, K. V.	50	2266	57	
Saklofske, Donald H.	45	1552	77	

Rey, Lourdes	42	918	82	
Kong, Feng	29	1619	34	
Cabello, Rosario	28	736	77	
Laborde, Sylvain	26	646	21	
Maccann, Carolyn	25	1100	29	

The Sankey diagram indicating the relationship among authors country (left), authors (middle), and keywords (right) is a three-dimensional illustrated in Figure 18. The figure describes the authors keyword preferences and their country. According to the Sankey diagram, the higher the number of links among variables, the thicker the connection lines. The most prolific writer, Extremera has published in the international journal of social psychology, Personality and individual differences, international journal of environmental research and public health, Frontiers in psychology, Plos one, Death studies, Sustainability, Psicothema, and Personality and individual differences while using the keywords “Emotional Intelligence”, “Intelligence”, “Trait emotional intelligence”, and “Stress” most frequently in his studies. Fernandez-Berrocal, Pablo who ranks second in productivity concentrated on the keywords “emotional intelligence”, “personality”, “stress”, “leadership”, and “empathy” while working with the Journal of clinical nursing, Journal of research in personality, international journal of educational management, Journal of leadership study, Journal of public management and practice, and Journal of services marketing.

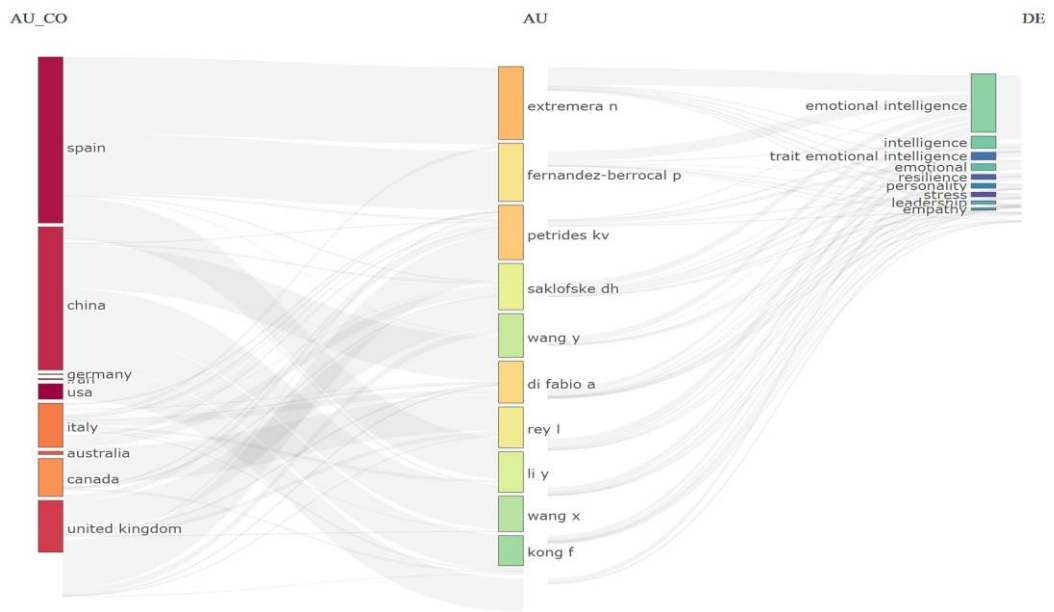


Figure 19. Sankey diagram of author, country and keywords.

4 DISCUSSION AND CONCLUSIONS

4.1 Discussion

The current study showed that bibliometric research is a significant scientific approach for both experienced and emerging scholars looking to delve deeper into a retrospective of broad and rich fields. The study also demonstrated how the widespread availability and usefulness of bibliometric database and tools, which make it easier to collect and analyse vast amounts of scientific data, have contributed to the bibliometric methodology's remarkable rise in popularity in recent years. With this information, only 'performance analysis' was conducted to get an overview of the study, citation analysis to identify influential articles (authors and journals) in the study, 'co-citation' analyses to reveal similarities and network in citations of papers. With the research the purpose was to (i) present the overall structure of the study, (ii) derive an integrative framework of the current knowledge, (iii) reveal evolutionary growth, (vi) outlines potential avenues for future research.

The global outbreak of the COVID-19 pandemic in 2020 has led to the widespread adoption of virtual environment solutions to support geographically dispersed project teams. The COVID-19 pandemic has forced many organizations to switch to remote work, which has transformed traditional leadership and management practices. It is never easy to know the feelings, build a relationship and manage the emotions of others while still grappling with performance issues in this increasingly virtual environment.

To meet performance expectations and maximize the VTs' outcomes, there is a strong need for efficient management of VTs. This requires a more in-depth understanding of how Emotional Intelligence enhance VTs performance. Current research suggests that Emotional Intelligence (EI) together with soft skills and intelligence are the major players in uplifting the motivation, reducing cultural barriers, making better decisions, achieve

more effective results and form stronger relationship among members in projects.

This bibliometric review covered the literature over about 15 years. This study provides a comprehensive view of the current trend in Emotional Intelligence, Virtual teams and Job performance studies. Methodologically, this study used a bibliometric analysis to perform analysis of journals, countries, publication types, keyword co-occurrence, authors in a repository of 8291 publications retrieved from Web of Science. The results show that Emotional Intelligence have been extended to several disciplines such as in the context of gender and team (Paraskeva, 2020; Downey et al., 2006; Dunaway, 2019; Goleman, 2018; Arteche et al., 2008; and Feimi & Vela, 2023). Stress management (Rezvani & Khosravi, 2019). Emotional intelligence on job performance (Bhadouria, 2014; Koutsioumpa, 2023; Wong & Law 2002; Clarke, 2010; Grobelny et al., 2021; and Goleman, 1998). Promotion and training of staff in project teams (Rezvani et al., 2019b p.131; Pal, 2023; and Luthanas, 2010).

The present review extracted and reported the evolutionary trend of publications in several sections and perhaps could be a good reference for future researchers. This closing section of the thesis highlights several limitations of the review, interprets the main findings, and discusses the implications of the results. Authors describe an analysis in workplace research based on bibliometrics, leaving the scope as open as possible while focusing on the frontiers of the field. This bibliometric study retrieved 8,291 original articles published between 2010 and 2024. Authors collected relevant literatures from the field, construct keywords.

While numerous studies have explored Emotional Intelligence, most articles have concentrated either on the direct or indirect correlation between EQ and team performance. It is never easy to assess, monitor and hold people accountable for their results; remote work requires a high level of self-control, self-organization and self-motivation.

This result is in tandem with previous literature. For example, Gamero *et al.*, (2021), based on their findings have shown that the “emotional intelligence composition” of the virtual teams can be described as “a key driver of the team members’ well-being”. In addition, a moderate impact of this composition has been observed on the team member’s well-being. This implies the positive impact of Emotional Intelligence competition on virtual team performance. It has been observed in the thesis that “leaders’ Emotional Intelligence and effectiveness” have a significant impact on virtual teams (Coronado-Maldonad & Benítez-Márquez, 2023). Likewise, Davaei *et al.* (2022) established the influence of Emotional Intelligence on business students’ performance. Hence, it can be perceived that virtual project team performance can be influenced by emotional intelligence.

Evaluating the above reviews, it can be said that the aspects of emotional intelligence are essential to be fostered within the individuals in the workplace as it impacts collaboration and deliverables of the task assigned to the individuals in the virtual team. To ensure an effective workforce within the virtual team setting, it is important to cultivate emotional intelligence. Based on the above discussion, it can be perceived that job performance, virtual team and emotional intelligence are three significant factors in today’s changing business environment when applying digital technologies become mandatory as well as profitable.

4.2 Key Themes and Trends in Publication During the Period of 2010 - 2024

This section concludes the research by providing insights related to keyword co-occurrence. This study provides a comprehensive view of the current trend in the studies. Answering our first research question, the keyword analysis distinguished three keywords research streams: Emotional intelligence, Virtual Teams and Job performance. Here an interesting result emerged, the frequency of emotional intelligence keyword has increased significantly since 2016.

Another result was understanding the increasing interest in the topic, which steadily grew throughout the period under analysis. The result visualization shows that Emotional Intelligence has been gradually paid attention to by many scholars and the number of articles published has been increasing. Such interest could be related to the rising importance attached to employee and organizational overall performance (Robinson, 2023; Palamer et al.,2003) or Recruitment (Pal, 2023; Luthans, 2010; Aydin et al., 2005). Regarding the geographic distribution of the topic, the most significant collaboration among authors occurred between USA and China (104), which was followed by USA and UK (78), USA and Canada (69), USA and Spain (55), USA and Australia (54), China and Australia (50), United Kingdom and Australia (50), Spain and Chile (49), Spain and United Kingdom (49) and China and UK (47).

In terms of number of collaborative researches, USA posted the greatest extent of collaboration with China, United Kingdom, Canada, Spain and Australia. USA has collaboration with all the countries including Finland and Nigeria but the frequency is minute.

Regarding the trending keywords, it allows us to picture the changes through time in strain research.

Table 14. Key themes and Frequency

KEYWORDS	FREQUENCY	YEAR_Q1	YEAR_Q2	YEAR_Q3
Emotional Intelligence	3677	2016	2020	2022
Intelligence	520	2016	2020	2022
Emotional	432	2017	2020	2022
Leadership	310	2016	2019	2022
Personality	248	2014	2018	2021
Trait Emotional Intelligence	228	2016	2019	2021
Resilience	199	2019	2021	2022
Stress	196	2016	2019	2022
Mental Health	129	2017	2021	2022

Covid-19	123	2021	2022	2023
Higher Education	85	2019	2021	2023
Validity	77	2014	2018	2022
Social Cognition	71	2013	2017	2020
Psychopathy	61	2013	2017	2021
Msceit	56	2013	2016	2019
Big Five	55	2012	2017	2020
Affect	55	2015	2018	2021
Teique	47	2013	2016	2020
Artificial Intelligence	46	2020	2022	2023
Soft Skills	42	2020	2022	2023

4.3 The most influential articles and authors in the field

The following section points out the key sources and publishing interest of the journals related to the subject. As shown in Table 11, a journal in psychology has the most published articles (380 documents) and 5679 citations being one of the leading sources in this field. This journal aims to publish research on Emotional intelligence based on different context such as work engagement, parenting style, mental health, job satisfaction, gender factor of personality, among others,.Extremera being the most productive author. Extremera has published in the International Journal of Social Psychology, Personality and Individual differences, International Journal of Environmental Research and Public Health, Plos One, Death Studies, Sustainability, Psicothema, and Personality and Individual Differences.

Figure 20 displays the top 20 authors, keywords and country respectively. Emotional Intelligence as an emerging topic and trends in research, Performance as virtual teams were not visible as shown in Figure 20. However, it seems that Virtual Teams are still a niche area of study. The keyword “Emotional Intelligence” stands out as the most frequently used keyword. The fact that the keywords “Emotional Intelligence”, “Job performance”, and “Remote Teams” are not frequently included in the

literature showing that interdisciplinary academic studies in these fields are of great importance. The three-field plot with the fields of most productive authors, countries and Journals from right to left shown in Figure 20. This shows the overall contribution of Extremera to research on Emotional Intelligence and Performance is relatively significant.

answering our second research question, authors found through our analysis of the 8291 articles that the most related articles (380 articles) were published by Frontiers in Psychology. 299 articles were published on personality and individual differences, 185 published by International Journal of Environmental Research and Public Health, 136 published by Culture and Psychology and 110 published by Sustainability. Additionally, frontier in psychology and personality and individual differences are notable with 5679 and 11155 citations respectively. Extremera, Fernandez-Berrocal, Di Fabio and Petrides are among the relevant authors. The listed sources also align with each authors production as the WoB analytical tool revealed. The USA, Spain and China are the leaders in this scientific production.

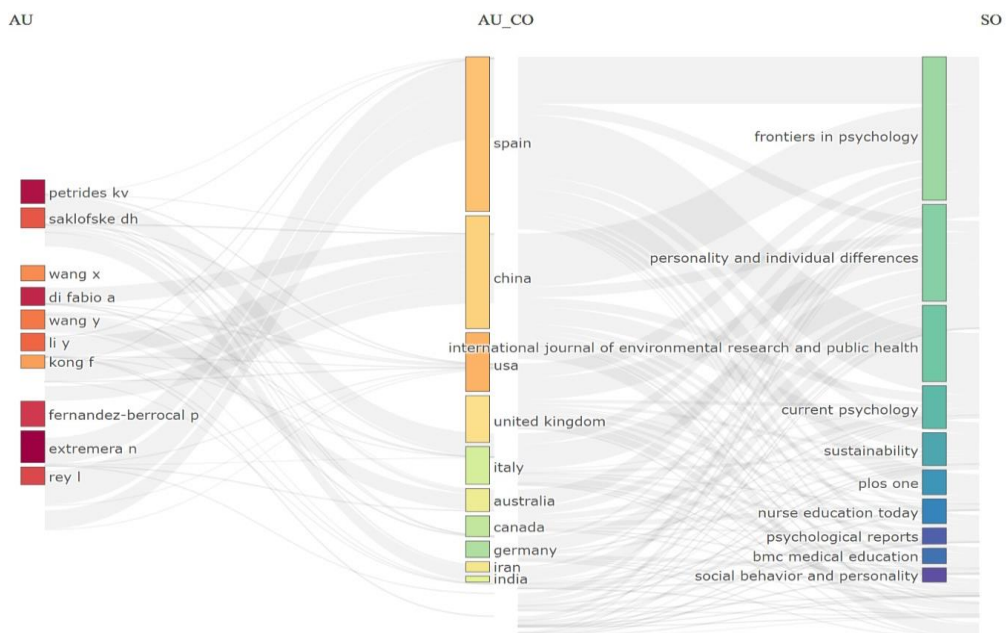


Figure 20. Sankey Diagram of author, author country and sources

4.4 Gaps and Areas for Future Research

The study extraction is limited to the WoB database despite the significance of the study. A future researcher should compare with a different academic database. The result will reveal the position of the research keywords in different academic search engine and show the productivity of different academic research engines. Our analysis uncovers several research dimensions within the existing literature that form the research knowledge body. It also underlines the existing gaps and opportunities for further exploration.

To illustrate emerging research framework, Figure 21 illustrates how emotional intelligence influences virtual team dynamics and subsequently impacts job performance. Emotional intelligence components, such as understanding emotions, regulating emotions, empathy, and social skills affect various aspects of virtual team interactions, including communication, conflict resolution, leadership, and teamwork. These dynamics, in turn, influence job performance indicators such as effectiveness, clarity, task completion, team dynamics, and overall performance. Each pathway in the framework represents a potential relationship between emotional intelligence, virtual teams, and job performance.

The authors addressed research question 3 regarding the future research directions through a content analysis of the 8291 impactful articles in the field. This outcome confirms the relevance of the results of the content analysis. We used these results as a basis for formulating future frameworks we believed should be looked into within the research streams. These frameworks are shown in Figure 21.

In conclusion, the results of our bibliometric analysis suggest that Emotional Intelligence has exhibited a certain degree of continuity over time. The study indicated how important emotional intelligence is. One fundamental limitation of the study is that it was conducted using one citation database. There are other databases such as EBSCO, and PubMed. This study may be extended by including these databases. This study will help researchers discover publications, institutions, and country gaps. For example, Finland and Nigeria are not visible in the country mapping. Scholars may need to extend research on these areas. Additionally, only articles in English were included due to the author's inability to read the identified articles for example, in Russian, or Spanish. Future research could extend the data search to other languages to have a balanced view of research performance regardless of the language used.

Additionally, numerous practical implications were found. This research contributes to the field by exploring current developments in the fields. Organizations can leverage insight to design training and development programs for employees, especially those working in virtual teams.

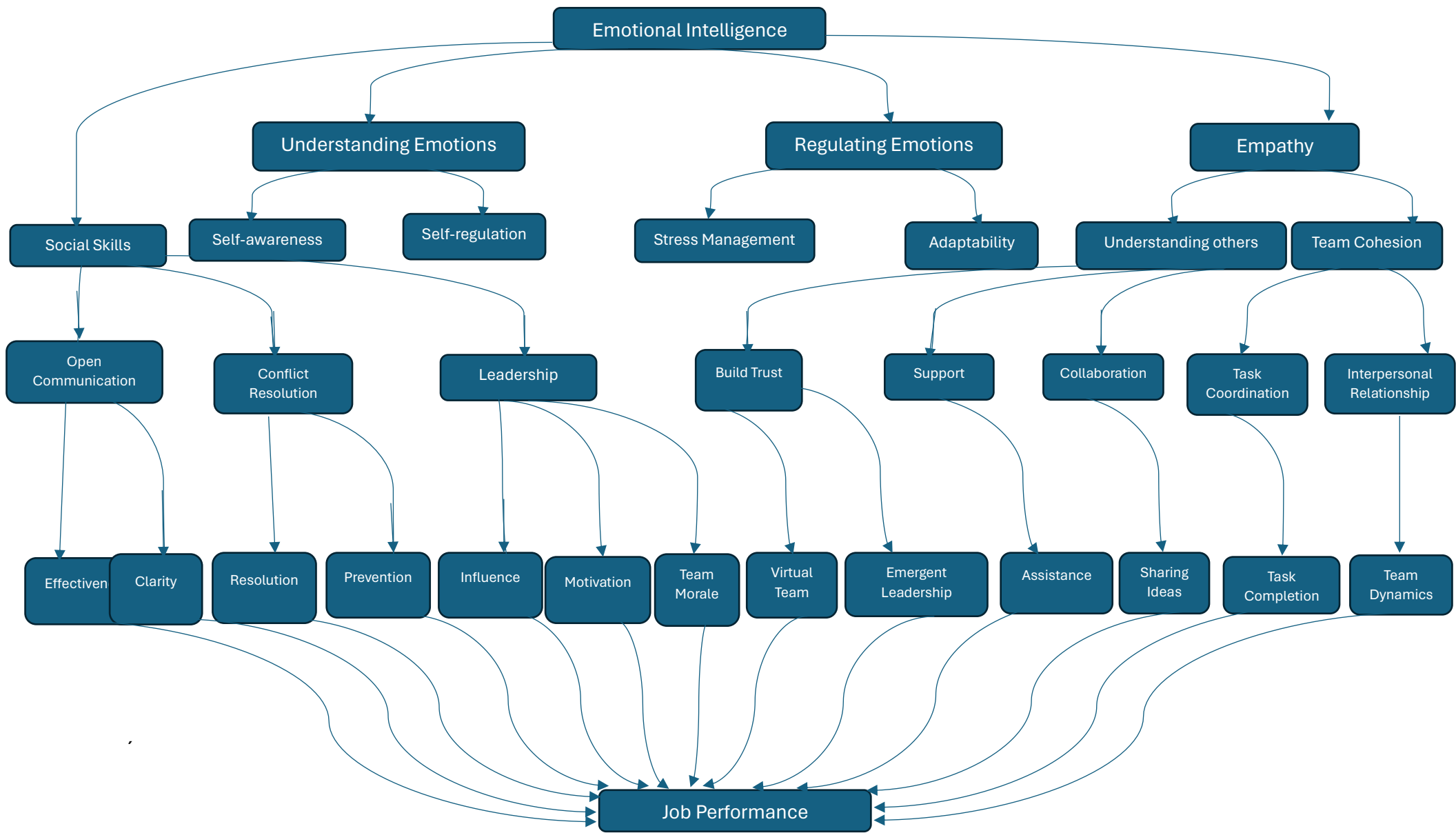


Figure 21. Future research framework

This study will help employers understand how emotional intelligence affects how an organization is managed, how a workplace is established, and how it might have an impact on employee performance. Ultimately it can prove to be a motivation for the readers to develop emotional intelligence traits or can also create awareness of its usefulness if the results found reflect its fruitfulness for management or certain job purposes. When trust in team is high, leaders' emergence seen as more trustworthy have a more significant impact on team performance. In addition, the leaders appeared to have a transformational leadership style as emergent leaders have the ability to motivate and inspire others on the team. It is important to note that Emotional Intelligence is a skill that can be developed and strengthened over time. Through self-reflection, seeking feedback, mindfulness, and effective communication practices.

The focus of this research was to find out what qualities and traits are contributing to emotional intelligence and whether or not the managers of a particular company possess those traits themselves. Emotional intelligence traits are considered important while hiring new people and emotional intelligence of the employees contribute to the organization's success. In this context, the organization's success is the positive results being delivered by the employees, the overall working atmosphere and the employee well-being.

The research has indicated that individuals in professions involving service to others or those with higher emotional intelligence (EI) tend to experience higher subjective levels of enjoyment in their employment. Project Managers who know their own emotions and are good at reading the emotions of others can lead to better work performance (WP). Not only is high Emotional Intelligence pertinent to leaders but it also benefits the team members (Cooper, 1997). Emotional intelligence, work performance and virtual project management has been discussed in different cultures and context. Emotional intelligence plays a role within the management of a company, the employees' productivity, well-being and overall performance of the organization.

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