



## **FOSTERING EFFECTIVE REMOTE TEAMS WITH TEAM COMPETENCY BUILDING**

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### **Abstract**

The advent of digitalization in technology has drastically altered the landscape of the business world, especially in the wake of the COVID-19 pandemic. The information and technology sector, in particular, has had to rapidly adapt to new technologies and ways of working in order to stay afloat during this challenging time. Remote work has become the new norm for many knowledge workers, forcing companies to shift their focus towards virtual teams.

Virtual teams can be highly effective, but only if each team member is focused on enhancing their team competencies. This article delves into the various team competencies that are essential for virtual teams to be successful. From communication skills to leadership abilities, it covers all the key areas that virtual team players need to master in order to lead their teams to success.

Moreover, the article also sheds light on the role of women in virtual teams and their level of competencies. Despite the challenges they may face, women can play an instrumental role in the success of virtual teams, and it is important to recognize and support their contributions. By exploring the key competencies required for virtual team success, this article aims to provide valuable insights for both individuals and organizations looking to succeed in this new era of remote work.

**Keywords:** Virtual teams, Remote work culture, competencies, group outcome, team performance, knowledge transfer, technical training.

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## **1. Introduction**

Virtual teams (VTs) have become increasingly important in the current business landscape due to various factors such as globalization, technological advancements, and the recent global impact of the pandemic. With the shift towards team-based work and the development of information and communication technology (ICT), organizations are now able to include employees from various locations and companies as part of their virtual teams.

Managing virtual teams effectively is crucial for organizations to achieve their objectives and optimize the outcome of their remote teams. Due to the dispersed nature of virtual teams in terms of time and space, employees rely heavily on technology for communication and collaboration. However, this reliance on technology also brings its own set of challenges, and organizations must create efficient processes to make remote work culture productive. Virtual teams have the potential to bring together diverse perspectives and foster creativity, which can benefit businesses in numerous ways. Digital technologies can be used to evaluate performance, mentor and encourage employees, and provide technical training to virtual team members. This can be done even with limited direct communication if necessary.

In addition to the technical aspects of virtual team management, there are several competencies that are crucial for virtual teams to function effectively. These competencies include technical training, professional expertise, social interaction, loyalty, reliability, and cooperation. Enhancing these competencies can lead to improved team performance, communication, and knowledge sharing among virtual team members.

The focus of this study is on virtual team competencies and their impact on group outcomes. By understanding the importance of these competencies and implementing best practices for virtual team management, organizations can optimize their remote teams and achieve their goals.

## **2. Literature Review**

The benefits of virtual teams are numerous and impactful. Beyond the ability to gather a team of experts from widely separated locations, virtual teams also enable round-the-clock productivity, reduce transportation and resettlement costs, and facilitate the exchange of ideas across different workgroups and locations (Dulebohn, J. H. et al, 2017). The professional personalities of team members can drive them to seek out new

perspectives and challenge existing team routines in order to improve their work, especially when it comes to more knowledge-intensive and demanding tasks (Mattarelli, E., Tagliaventi, et al 2017).

In terms of functional expertise, technical expertise has been found to positively impact virtual team confidence, effectiveness, and satisfaction with team membership (Leppäkoski, M. 2021). Teams with members who are thought to have similar technical expertise tend to establish routines aimed at formalizing and elevating industry standards (Mattarelli, E., Tagliaventi, et al 2017). Social interactions among team members play a crucial role in the construction and transfer of knowledge, and even poor interpersonal links can have a significant impact on this process (Davidavičienė, V. et al 2020). Workplace well-being plays a important role in interpersonal skills and innovation technology (Ammupriya, A., & Subrahmanyam, P. 2023) Territorial separation and dependence on digital communication can, however, limit the amount and quality of socializing necessary for building trust in virtual teams (Robert, L. P. 2020).

Effective communication is a key aspect of virtual team management, and the ideal virtual team leader should possess attributes such as frequent feedback, trust and work clarity, unambiguous guidance, reliability, and a strong personality (Maduka, N. S., Edwards, et al 2018). The information shared among team members should also be verifiable and reliable (Ludden, P., Ledwith, et al 2012). Virtual community loyalty can be impacted by factors such as the substance and quality of information shared, financial or nonfinancial incentives, customization of services, membership structure, and member privacy (Shen, Y.C. et al 2010). Virtual teams with a higher density of informal relationships tend to have higher customer loyalty (Benefield, G. A., Shen, C. et al 2016).

Over time, cooperation in virtual project teams can improve as members interact and share project-related information (Wise, T.P. 2013). However, factors such as task organization, project type, and private life may also play a role in influencing individual cooperative behaviors (Collins, N., Chou, et al 2017). The most commonly reported positive aspects of virtual team performance include good interpersonal attributes such as empathy and behavioral flexibility, as well as trust and the suitability and depth of the communication technology used by the team (Clark, D. A. G. et al 2019).

Further research into the interactive dynamics of shared leadership, trust, and global virtual team performance can help multinational corporations

improve their virtual team capabilities (Zhu, X. & Lee, K. S. 2017). Effective communication by the emergent virtual team leader is crucial for maximizing productivity and efficiency, and virtual teams should adopt technical platforms that support their specific communication needs (Laitinen, K. & Valo, M. 2018). Virtual team competency supports the employees to motivate towards job satisfaction (Ammupriya, A., & Preetha, S. 2022) sharing knowledge is also important, as team members who enjoy helping others by sharing their knowledge tend to have a positive attitude towards knowledge sharing (Killingsworth, B., Xue, Y. & Liu, Y. 2016). Digital platforms facilitate both traditional and innovative ways of sharing information, allowing for the exchange of implicit and explicit knowledge as support and mutual ties build over time (Olaisen, J. & Revang, O. 2017).

### **Objectives of the Study**

1. To identify the significance of virtual team competencies on group outcome of remote work.
2. To analyse the influence of experience of employees on the remote work group outcome
3. To study the influence of education qualification of employees on the remote work group outcome

### **Conceptual framework of the study**

In order to effectively study and understand the best practices for selecting virtual team (VT) members, it is crucial to establish a robust framework for organizing future research. This framework will serve as the foundation and guide for all future investigations into the selection of VT members, as it will help determine the key parameters and guidelines for achieving optimal group outcomes (Shields and Tajalli, 2006).

In this framework, virtual team competency is considered as the independent variable, while group outcome serves as the dependent variable. The independent variable includes two important components: professional skills and general skills. Professional skills encompass technical expertise,

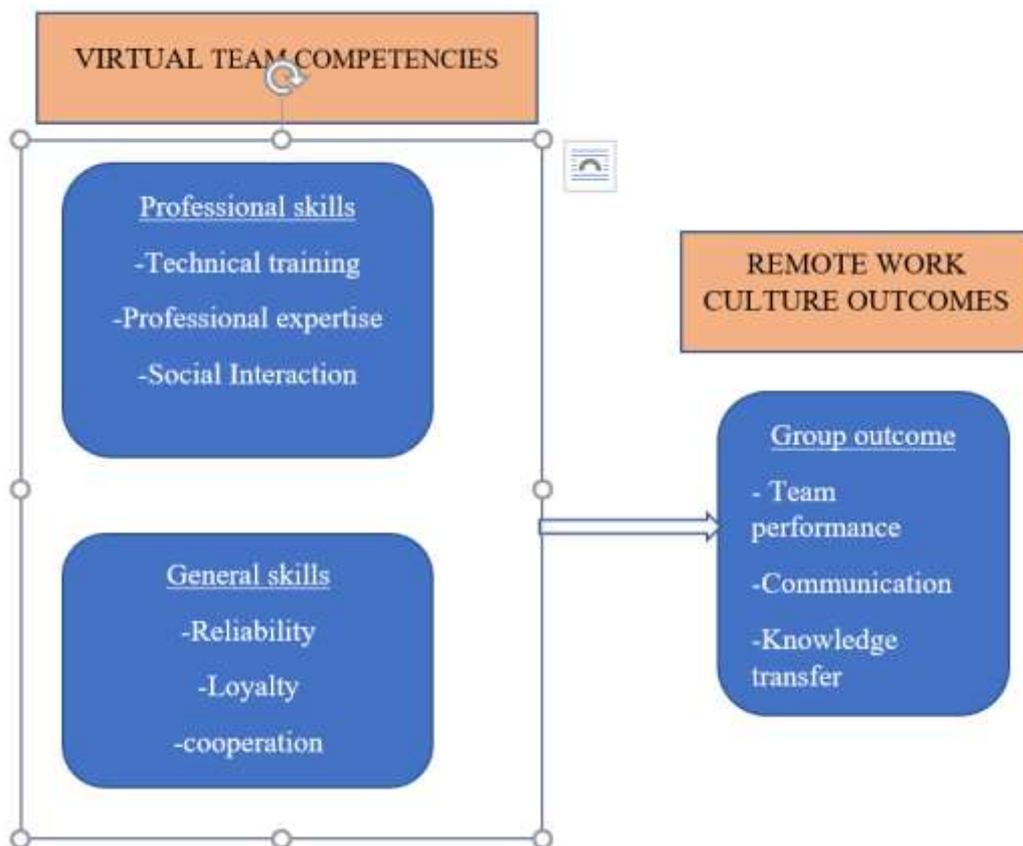
professional experience, and technical abilities, while general skills include social interaction, reliability, loyalty, and cooperation. The dependent variable, group outcome, encompasses team performance, communication effectiveness, and knowledge transfer.

The technical skills required of virtual team members are highly dependent on the specific goals and objectives of the team. In practice, selecting the appropriate team members for VTs often involves considering their technical expertise and motivations for joining the team. In addition, the professional expertise of team members is a crucial factor in ensuring that the team is able to benefit from their input and contributions. It is important for the experts in the team to be well-trained and up-to-date with their skills and knowledge.

Aside from professional skills, social interaction is also a critical component of virtual team competency. In order to achieve optimal group outcomes, all team members must be sociable and able to effectively communicate with one another. This will help to foster a sense of cohesiveness and unity among team members.

General skills such as reliability, loyalty, and cooperation are also crucial components of virtual team competency. Reliability helps to ensure that tasks are completed on time and without delay, while loyalty contributes to the overall cohesiveness of the team and can improve productivity. Cooperation is necessary for virtual teams to be successful, as it allows tasks to be completed efficiently and effectively within the given timeframe.

Therefore, the successful selection of virtual team members requires a balance of both professional and general skills, including technical expertise, social interaction, reliability, loyalty, and cooperation. When all of these competencies are present in a virtual team, it is likely to result in improved group outcomes, including better team performance, effective communication, and efficient knowledge transfer.



### 3. Research Methodology

The aim of the study was to examine the relationship between virtual team competency and group outcome in the context of Information Technology (IT) organizations. To achieve this objective, the research design used a quantitative approach, which relied on the use of a structured questionnaire to collect data from a sample of 330 IT employees. The sample was chosen using simple random sampling, which is a widely used and straightforward method of selecting a sample from a larger population.

The questionnaire consisted of items that measured both virtual team competency and group outcome. The virtual team competency was assessed through a series of questions related to professional skills and general skills. Professional skills included technical skills, professional expertise, social interaction, reliability, loyalty, and cooperation. The general skills were evaluated based on items related to reliability, loyalty, and cooperation. On the other hand, the group outcome was measured through items related to team performance, communication, and knowledge transfer.

The data collected from the survey was analyzed using descriptive statistics and inferential statistics. Descriptive statistics was used to summarize the data and to describe the characteristics of the sample. Inferential statistics was used to test the

research hypotheses and to establish the relationship between virtual team competency and group outcome. The results of the study are expected to provide insights into the factors that influence the performance of virtual teams in the IT industry and to contribute to the existing body of knowledge in this area. Additionally, the findings of this study are expected to inform practitioners and managers on how to select and manage virtual teams more effectively to achieve better outcomes.

#### Tools for Data Analysis:

The statistical analysis of the data involved the use of a variety of methods to uncover patterns, relationships, and distributions in the data. Linear Regression was used to examine the relationship between two continuous variables, ANOVA was used to compare the means of two or more groups, and Percentage Analysis was used to determine the proportion of cases belonging to each category. The data analysis was performed using a statistical software package, which provided a suite of tools for data interpretation and visualization. The results of the analysis also included a reliability test, which measured the consistency of the data. A high score in the reliability test (Cronbach's alpha) indicated that the data was internally consistent and could be trusted.

**Reliability Statistics:**

Cronbach's Alpha	N of items
0.970	60

The Cronbach's alpha value for 60 items is 0.970. The questions are reliable and within constant.

Table 1: Demographic Data

Sample characteristics	Category	Frequency	Percentage
Gender	Male	208	63.0
	Female	122	37.0
Age	21yrs-30yrs	319	96.7
	41yrs-50yrs	11	3.3
Marital Status	Single	112	33.9
	Married	218	66.1
Education Qualification	Under Graduate	190	57.6
	Post Graduate	128	38.8
	Others	12	3.6
Experience	Below 5yrs	100	30.3
	5yrs-10yrs	116	35.2
	10yrs-15yrs	94	28.5
	Above 15yrs	20	6.1

The above demographic data indicates that 63% of respondents are male IT employees, 96.7% are between the age group of 21yrs to 30yrs, 66.1% of employees are married, 57.6% of IT employees

education qualification is under graduation and 35.2% of employees have 5yrs to 10yrs of work experience.

Table 2: Linear Regression Analysis

H1: There Is Significant Relationship Of Professional Skills And General Skills On Group Outcome Of Remote Work.

Model Summary <sup>b</sup>				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.781 <sup>a</sup>	.609	.607	.810
a. Predictors: (Constant), Gen_skills, Prof_skills				
b. Dependent Variable: Group_outcome				

Coefficients						
Variables		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	Constant	0.488	0.182	-	2.681	.008
	Prof_skills	0.406	0.044	0.433	9.261	.000
	Gen_skills	0.465	0.052	0.420	8.979	.000

a. Dependent Variable: Group\_outcome

The correlation coefficient is 0.781 measures the degree of relationship between the actual values and the predicted values of the group outcome. Because the predicted values are obtained as a linear combination of professional skills and general skills, the coefficient value of 0.781 indicates that both the independent variables such as professional skills and general skills has strong and positive relationship with the dependent variable such as group outcome in remote work culture.

$$Y = 0.488 + 0.406X_1 + 0.465X_2$$

Here the coefficient of X1 is 0.406 represents the partial effect of professional skills on remote group

outcome, holding the other variables as constant. Group outcome would increase by 0.406 for every unit increase in professional skills.

The coefficient of X2 is 0.465 represent the partial effect of general skills on remote group outcome, holding the other variable as constant. Group outcome would increase by 0.465 for every unit increase in general skills.

Based on the standardized coefficient professional skill(0.433) is the most important factor followed by General skill(0.420).

Table 3: Anova  
H2: Experience of employees has influence on the group outcome of remote work

ANOVA						
Group outcome		Sum of Squares	df	Mean Square	F	Sig.
Team Performance	Between Groups	2.199	3	.733	2.027	.110
	Within Groups	117.864	326	.362		
	Total	120.063	329			
Communication	Between Groups	9.982	3	3.327	8.660	.000
	Within Groups	125.262	326	.384		
	Total	135.245	329			
Knowledge transfer	Between Groups	3.345	3	1.115	1.959	.120
	Within Groups	185.487	326	.569		
	Total	188.832	329			

The P values of variables such as team performance and knowledge transfer are greater than 0.05 level of significance. Therefore, null hypothesis for these variables are accepted. It concludes that there is no influence of experience of employees on the variables team performance and knowledge transfer.

The P value of the communication variable is less than 0.01level of significance. Therefore, null hypothesis is rejected. The experience of employees has an influence on the communication of employees in remote work.

Table 3: anova  
H3: education qualification of employees has influence on the group outcome of remote work

ANOVA					
Group outcome	Sum of Squares	df	Mean Square	F	Sig.

Team Performance	Between Groups	4.059	2	2.030	5.722	.004
	Within Groups	116.003	327	.355		
	Total	120.063	329			
Communication	Between Groups	3.644	2	1.822	4.527	.011
	Within Groups	131.601	327	.402		
	Total	135.245	329			
Knowledge transfer	Between Groups	3.809	2	1.905	3.366	.036
	Within Groups	185.022	327	.566		
	Total	188.832	329			

The P values of variables such as communication and knowledge transfer are less than 0.05 level of significance and the team performance variable is less than 0.01 level of significance. Therefore, null hypothesis is rejected and alternate hypothesis is accepted. It concludes that education qualification of employees influences the group outcome of remote work.

#### 4. Discussion & Conclusion

The goal of this study was to investigate the factors that contribute to the success of virtual teams in completing their mission. The teams, separated by a significant geographical distance, were tasked with performing assigned duties, responsibilities, and tasks, using various available technologies. The study's hypotheses predicted that both group and individual factors would influence the teams' social interactions.

The results of the study showed that professional skills were more critical to the success of a virtual team than general skills. The experience of employees was found to have a significant impact on the outcome of group work in a remote setting, while the education level of employees only influenced their communication skills within the virtual team. To further understand the dynamics of virtual teams, it would be valuable to conduct additional research on the impact of professional and general skills on virtual team outcomes. This could include an examination of how demographic factors, such as gender and age, may also influence virtual team outcomes.

Additionally, the study suggests that the use of appropriate technologies is a key factor in the success of virtual teams. The teams were found to be more effective when they were successful in using

the right technologies for the right subtasks and completing the objectives set out in the mission, thus reducing any ambiguity. The importance of minimizing ambiguity in virtual team missions cannot be overstated, as it helps to ensure that the teams are working towards a clear and shared goal.

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