

The role of employer branding and work-life balance on virtual teams' commitment and performance*

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Abstract

Management of virtual teams draw special attention of managers and researchers. This study aims to investigate the role of employer branding and work-life balance on virtual teams' commitment and performance. Results are bringing key factors of virtual teams' management. The data brings valuable insight into key factors related to virtual employee commitment, reliability and performance based on multidimensional statistics. The findings revealed that most important factors affecting virtual teams' performance are related to career development opportunities in the area of work-life balance and clear policies and communication and to reach positive employer branding impacting virtual employee commitment.

Keywords: Management, employee, human resources, remote work, global virtual team, performance

JEL: M12, M14, M16

Introduction

Virtual teams refer to work arrangements where a group of people are geographically dispersed, have limited face-to-face contact, and collaborate with each other through the support of networked communication tools to achieve common goals (Lowry/Schuetzler/Giboney/Gregory 2015). Geographic dispersion and electronic media are most often considered the basic characteristics of a virtual team (Dulebohn/Hoch 2017). Virtual teams are widely accepted as a way to structure work and mobilizing talents that are geographically dispersed (Liska, 2022). They can remove the limitations of time and distance. Virtual teams allow organizations to hire the most talented people regardless of location, contributing to team effectiveness (Schmidke/Cummings 2017). Other benefits include, according to Bhat et al. (2017), Shaik et al. (2021), Zaharie (2021) are diverse workforce engagement, innovation allocation of resources, flexible organizational structure, better decision-making and increased organizational performance. However, managing virtual teams also comes with challenges that organizations must address (Lombardi/Pina e Cunha/Giustiniano 2021; Swart/Barnard/Chugh 2022; Caputo/Kargina/Pellegrini 2023). Conditions must be created so that virtual teams can function effectively and contribute to the

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achievement of the organization goals (Rogers/Madden/Grubb/Karriker 2021; Liska, 2022; Swart et al. 2022; Caputo et al. 2023). Wide spread of global virtual teams is also associated with growing demand of e-leaders with top virtual social skills (Kerfoot, 2010) including variables related to work-life balance and employer branding (Chang/Carvalho/Sbragia 2023; Georganta/Peus/Niess 2024), because virtual teams often lack coordination, control, communication, trust, social interaction, and unclear boundaries between work and personal time (Cascio/Shurygailo 2003; Chang et al. 2023; Georganta et al. 2024).

The rise in the use of virtual teams dramatically increased with the COVID-19 pandemic, when organizations had to rely on working from home (Chaudhary/Rohitagi/Singh/Arora 2022). A number of scientific studies dealing with the issue of the effectiveness of virtual teams also began to appear, i.e. Rogers et al. (2021), Shaik et al. (2021), Zaharie (2021), Liska (2022) and others such as Chang et al. (2023), Georganta et al. (2024). According to studies, the performance of virtual teams can be increased through effective leadership of these teams (Gross 2018; Chaudhary et al. 2022; Caputo et al. 2023). Studies show that leading virtual teams still is more challenging than traditional teams (Swart et al. 2022; Caputo et al. 2023). In a virtual environment, there are fewer interpersonal interactions, the lower level of relationships results from the lack of personal contact, the nature of member communication and geographical dispersion, which can have a detrimental effect on team performance (Swart et al. 2022; Caputo et al. 2023; Georganta et al. 2024). Thus, virtual team leaders should devote much more time and effort to establishing relationships among dispersed team members and supporting team building processes (Liao 2017; Chang et al. 2023; Georganta et al. 2024). Therefore, this article is gradually focusing on researching the leadership approach that would be effective and would allow the maintenance of high-quality interpersonal relationships to enhance virtual teams performance and commitment. The article will also investigate the role of work-life balance and employer branding in this process. This issue is addressed in the study by Zhang et al. (2022), Swart et al. (2022), Chang et al. (2023). Their research show areas and approaches in communication that can positively influence virtual team performance. High-quality interpersonal relationships mediate the relationship with virtual team performance and success (Swart et al. 2022; Chang et al. 2023; Georganta et al. 2024). Thus, high-quality interpersonal relationships become more important for improving team performance.

Given the focus of recent studies, this article aims to study the relationship between employer branding and work-life balance and how these two factors impact team commitment and performance. Other studies are focusing on communication, leadership and problematic factors of virtual teams, but no study shows deeper analysis and research on those two important factors that define current demands of employees (not only virtual), which is work-life balance and

employer branding techniques which define employee well-being, satisfaction and impact commitment and performance. This study shows significant impacts of variables of employer branding and work-life balance on commitment and performance on data collected from global virtual teams will be used to identify the importance of these two factors on employees working in virtual teams. The contribution of this paper is presenting a systematic construct of variables impacting virtual team commitment and performance in the area of employer branding and work-life balance.

The aim of this paper is to investigate the role of employer branding and work-life balance on global virtual teams' performance and commitment. The aim was is designed to evaluate the performance of global virtual teams based on their outputs, delivery quality and communication efficiency, as those areas were previously proved to be the primary drivers of overall performance (Bodecker/Dehler 2011; Prasad/DeRosa/Beyerlein 2017; Swart et al. 2022; Chang et al. 2023; Georganta et al. 2024) and levels of commitment were referred to be impacted by insufficient information sharing, and lack of interactions with team members (Gross/Stary/Totter 2005; Kanawattanachai/Yoo 2007; Cheng/Macaulay 2014; Cheng/Bao/Yu/Shen 2021; Swart et al. 2022; Caputo et al. 2023). Results are bringing key factors of global virtual teams' management in the area investigated to address effects of teams' commitment and performance. This article consists of review of current literature, presents methods used for data collection and analysis. Chapter Results presents outputs from analyses of data collected to address factors affecting virtual teams performance and reliability. Findings are discussed and compared in the Discussion part. The summary of resultant factors related to employee well-being, satisfaction and impact on commitment and performance is presented in the Conclusions.

Theoretical background

Virtual teams are becoming an integral and necessary part of the business function environment. According to Derven (2016), they offer many advantages including obtaining an international perspective on business challenges and solving them by subject matter experts, achieving economies of scale, leveraging complementary work cycles that enable 24/7 productivity, using the best talents regardless of where they are located, accelerating innovation and product launches, enhancing local knowledge and presence. Global teams are inherently diverse, both differences and similarities should be used as a source of innovation and new ideas. A global virtual team needs to have the right mix of functional, cross-cultural and technical skills to fulfil its stated purpose. Diversity can promote new ideas and innovation compared with homogenous teams. However, it is necessary to identify the most expedient and optimal ways for the functioning of these teams.

Global virtual teams were addressed by Tavoletti and Taras (2023), who in their study conducted a bibliometric review of the extensive literature focused on this issue. The analysis revealed three research clusters: a cluster focused on management information systems and organization, a cluster devoted to general management, and a cluster focused on international management and behavioural studies. The study showed changes in research in terms of topics, journals and disciplinary approaches from 1999 to 2021 and suggested future paths of research.

In the context of global virtual teams, Stahl and Maznevski (2021) and Tavoletti and Taras (2023) mention the X-Culture project, which significantly helps to expand knowledge about global virtual teams. It addresses the relationships between highly relevant and general theoretical constructs, such as the academic pedigree of a team member and the job performance of a team member, peer evaluations and team performance, peer evaluations and individual effort, cultural intelligence and performance, and team charters and performance (Tavoletti/Stephens/Dong 2019; Taras/Gunkel/Assouad/Tavoletti/Kraemer/Jimenez/Svirina/Lei/Shah 2021; Román-Calderón/Robledo-Ardila/Velez-Calle 2021; Richter/Martin/Hansen/Taras/Alon 2021; Johnson/Baker/Dong/Taras/Wankel 2021). The importance of research grows in the context of a critical issue of global virtual teams, namely the building of trust (Jarvenpaa/Leidner 1999). Both the problems related to cultural differences and barriers (Stahl/Tung 2015) and the enhancement of creativity (Wang/Cheng/Chen/Leung 2019) need to be perceived. The impact of global virtual teams on firm performance and business model innovation in digital transformation is also understudied (Tavoletti/Kazemargi/Cerruti/Grieco/Appolloni 2021).

Global virtual teams – their functioning and performance

Derven (2016) proposed a model that could help organizations make virtual teams' work more effective. The author considers diversity and inclusion to be the main success factor and provides a practical framework of the structure and processes needed to achieve the desired results. She emphasized the importance of purpose (why?), people (who?) – there is an emphasis on relationships, inclusive leadership and rewards and recognition – and processes (how?) – attention should be paid primarily to sponsorship, governance, technology, conflict management and decision rights.

The topic of global virtual teams has become ubiquitous in business practice and research, regardless of industry (Bjorn/Esbensen/Jensen/Matthiesen 2014). The use of virtual teams and the focus of research in this area have changed in recent years. Practice has shown that globally distributed virtual teams can become the standard (Bjorn et al. 2014). The same study also highlighted that factors such as management readiness, the common ground of team members,

the coupling or work items are important for the functioning of global virtual teams, considers work items coupling crucial for strong team bonds despite physical distance. Interpersonal communication, commitment and cross-cultural communication style are also considered as important (Lippert/Dulewicz 2018), as trustworthiness is seen as an essential factor in high-performing virtual teams. Research shows that higher levels of trust contribute to knowledge sharing and lead to better performance in virtual teams (Killingsworth/Xue/Liu 2016; Morrissette/Kisamore 2020; Zaharie 2021). Knowledge sharing is considered a pivotal factor in the performance of virtual teams (Handy 1995). Social interactions are crucial to affective reactions within a team (Rogers et al. 2021). On the other hand, research published by Klitmøller and Lauring (2013) shows that most impacts of virtuality tend to be of negative nature.

Research has shown that trust plays an essential role within virtual teams (Pinjani/Palvia 2013; Cheng/Fu/Druckenmiller 2016). Trust contributes to the positive organizational outcomes (Chiles/McMackin 1996; Zhang/Fang/Wei/Chen 2010). Members of virtual teams can develop trust by providing timely information, or by corresponding responses during communication, instead of through social interactions (Henttonen/Blomqvist 2005). The absence of social interactions and trust can lead to low levels of team performance in virtual teams.

Group efficiency has been identified as one of the most important dependent variables of trust in research studies (De Jong/Dirks/Gillespie 2016). For example, trust can reduce transaction costs (Chiles/McMackin 1996), promote open and efficient information sharing (Zhang et al. 2010), increase individual and group trust in relationships, and improve group efficiency. The relationship between trust and group efficiency in the context of multinational virtual teams was investigated by Cheng et al. (2021). According to them, trust should be perceived both at the individual and group levels, which has a significant effect on group efficiency, especially in the absence of common experiences and cultural backgrounds in the context of multinational virtual teams. The study showed that there is a relationship between trust and group efficiency and that group awareness plays an important role in team collaboration. The positive relationship between reliability-based trust and group efficiency is stronger if individuals perceive a high level of openness in group communication and collaboration.

According to various studies, team performance is significantly influenced by internal team communication (Massey/Montoya-Weiss/Hung 2014). However, workers are able to adapt to the conditions of virtual teams (limited communication channels, likely instability of the Internet connection and lack of opportunities for informal communication) – see van der Kleij et al. (2009). In the case of geographically dispersed teams, video communication and similar technologies help (Bradley/Baur/Banford/Postlethwaite 2013). Geographical distance be-

tween team members can complicate conflict management (Hill/Bartol 2016). Communication complexities between team participants negatively affect team performance (Connelly/Turel 2016). However, it is still necessary to investigate the relationship of conflicts to team performance (Caputo et al. 2023). Research has shown that conflict management style and conflict management behaviour are critical conditions for a successful team.

Knowledge of information and communication technologies has enabled managers of some organizations to make a relatively smooth transition from a physical to a virtual environment, especially in the IT sector (Lombardi et al. 2021). However, in many organizations this transition is associated with a number of challenges. In particular, the changing nature of the workplace is associated with a new approach to leadership. Van Wart et al. (2019) call leadership at the virtual workplace as “e-leadership”.

Kramer (2005) summarized the key competencies of an e-leader: open-mindedness, sensitivity to cultures, dealing with complexity, resilience, creativity, honesty, stable personal life and technical competence. Van Wart et al. (2019) on this basis identified six essential e-leader competencies: e-communication skills, e-social skills, e-team building skills, e-change management skills, e-technological skills, and e-trustworthiness skills. However, they emphasized in their study that these competencies need to be further empirically tested. The list of competencies of an effective e-leader should be supplemented with emotional intelligence (Nokelainen/Ruohotie 2005). Sparks et al. (2001) noted that leader effectiveness needs to be assessed in the context of employees' wellbeing. Hertel et al. (2005) and Grant and Hartley (2013) summarized the negative effects of remote work on employees' wellbeing such as the feeling of isolation, misunderstanding and ambiguity, reduced interpersonal contact, overburdened with work and having less time for recuperation. The e-leader must find ways to help employees manage emotional issues within global virtual teams.

Although there is a large body of literature on the influence of leadership on employees' wellbeing, studies examining the relationship between e-leadership and employees' wellbeing in the context of global virtual teams are scarce (Jimenez/Boehe/Taras/Caprari 2017). This issue was addressed in a study by Chaudhary et al. (2022). The aim of the study was to investigate the impact of leader e-competencies on employees' wellbeing in global virtual teams during the COVID-19 pandemic. A survey was conducted among 810 employees of international IT companies. Three core e-competencies of leaders impacting employees' wellbeing during the COVID pandemic have been identified, namely e-communication skills, e-change management skills, and e-technological skills. The study showed that emotional intelligence significantly moderated the association of leader's e-competencies and the wellbeing of employees.

Culture, communication and conflict in virtual teams

According to Davidaviciene and Al Majzoub (2022), workers with multiple nationalities work within global virtual teams, therefore it is very important to understand how culture influences the work, especially that related to decision-making processes. Culture is defined as the shared values, traits and behaviours by people in a specific region (Duran/Popescu 2014). Cultural differences can cause negative behaviour between team members because culture is the main source from which internal attitudes and values emerge (Harzing/Pudelko 2014). Virtual team members from different cultures interpret and process information needed for decision-making differently (Paul/Dennis 2018).

The influence of cultural diversity on the functioning and performance of virtual teams is one of the least researched areas and therefore needs further attention to this issue (Caputo et al. 2023). In the context of teamwork, cultural diversity refers to the different cultural backgrounds of team members (Harush/Lisak/Glikson 2018), including diversity in nationality (Gibbs/Sivunen/Boyraz 2017) and broader cultural aspects, e.g., linguistic diversity and cultural dimensions. Some studies consider cultural diversity as a reason for miscommunication in a group (Brett/Behfar/Kern 2006). Gibson et al. (2014) point out that the dynamics of globalization and technological progress increase virtuality and multiculturalism in teams, leading to the emergence of geographically dispersed international teams. The implementation of cultural diversity can lead to misunderstandings and conflicts between team members also due to social categorization (Harush et al. 2018). Stahl et al. (2010) in turn found that physical dispersion of team members tended to moderate the impact of cultural diversity on conflict; virtual international teams showed lower levels of conflict and higher social integration compared to multicultural collocated teams.

In their research, Davidaviciene and Al Majzoub (2022) focused on the effect of cultural intelligence, conflicts and transformational leadership on decision-making processes in virtual teams. Their research showed that to improve decision-making processes within virtual teams, management should focus on the following factors: cultural intelligence, transformational leadership, and mediation of task conflicts, which may have a positive effect on decision-making processes. Management should look for ways to eliminate or reduce the factors of relationship conflict between members of the virtual team, which, on the other hand, have negative effects on decision-making and thus on the performance of the virtual team. According to Wei et al. (2017), decision-making processes belong among the basic factors that influence the performance of virtual teams. Sufficient attention has not yet been paid to this issue, research in this area should be expanded (Tan 2019; Davidaviciene/Al Majzoub/Meidute-Kavaliauskienė 2020).

The use of information and communication technologies makes it difficult for team members to realize the existence of conflict (Davidaiciene/Al Majzoub 2022). Conflicts between team members can occur for a variety of reasons, such as cultural differences, group value consensus, demographic diversity, and functional diversity. Conflict can be related to relationships or tasks. Conflict in relationships grows because of differences in norms, values, behaviours, and attitudes. Task conflict refers to policies and procedures in distributing resources or differences in the interpretation of facts to produce a judgment. According to Wu (2020), the determinants of both categories of conflict are information and communication technology diversity, culture, team size, and task function. Conflict adversely affects decision-making in a virtual team because it makes it uncomfortable for members and team members do not share unique information that improves the decision-making process (Derven 2016). Research has shown that task conflict can enhance performance in non-routine and cognitive tasks, while personal conflict is detrimental to team decision-making (Wang/Wang/Chang 2019; Zhang/Zhang 2020). Task conflict improves decision-making by presenting different perspectives of team members (Wu 2020) and increases information and knowledge sharing (Kiernan/Ledwith/Lynch 2019).

Leaders of virtual teams must be those who can motivate, able to achieve maximum performance of tasks, manage conflicts and secure satisfaction of team members. Successful leaders are able to develop personal relationships with team members that promote trust and cohesion (Paul/Drake/Liang 2016). Leaders must stimulate their team members through the effective use of communication and motivational skills. The virtual environment requires certain characteristics from leaders: leadership strategies, communication techniques, various personal skills and the ability to collaborate and communicate (Eisenberg/Post/Ditomaso 2019). An important leadership style that has received a lot of research attention is transformational leadership (Aca/Sonnadara/O'Neill 2018; Al Zain/Vasilache/Incze 2018).

Employer branding

An employer brand represents a set of benefits and values recognized by individuals that is associated with an employer (Backhaus/Tikoo 2004). Employer brands are often associated with human resource management (HRM) (Backhaus 2016). However, it is a concept that also strengthens relationship marketing and corporate communication (Ruchika/Prasad 2017). Rampl and Kenning (2014) describe the employer brand as the image of the employer, as perceived primarily by current and potential employees. Employer brands are developed to create an image that makes the organization an employer of choice for current and potential employees (Backhaus 2016). Employees' expectations with respect to their employer are met when current and potential employees' perceptions of

the employer brand are in harmony (Mosley 2014). Expert studies also examine the brand from the perspective of brand management (Theurer/Tumasjan/Welpe/Lievens 2018), talent attraction (Lievens/Slaughter 2016) and internal public relations (Deepa/Baral 2022).

Virtual employees play a central role in organizational functioning and representation (Kanwal/Van Hoye 2023). Personalists and managers thus try to create an attractive image of the employer. Over the years, employer brands have become an integral part of HRM literature and practice. Given the war for talent and the increased importance of employees both within and outside the organization, employer branding remains a critical function of HRM (Yu/Dineen/Allen/Klotz 2022). Kanwal and Van Hoye (2023) point out that there is limited research on how employees perceive and respond to their organization's employer brand. Kanwal and Van Hoye (2023) study focused only on content attributes (i.e., instrumental and symbolic dimensions of the image), leading to a limited understanding of the construct. The content of an organization's employer brand can be defined as a set of specific employer attributes or information that an individual associate with the organization as a place to work (Lievens 2006). Employer brand content can include all elements related to the employer that are consistent with the instrumental-symbolic framework (Ghielen/De Cooman/Sels 2021). Instrumental attributes refer to the perception of objective job or organizational characteristics of the organization as an employer (e.g., salary, job security, career opportunities). They correspond to the functional or factual attributes that an employer can provide to fulfil the utilitarian needs of individuals. Symbolic attributes refer to perceived subjective or intangible characteristics (e.g., sincerity, competence, innovativeness) that reflect the employer personality of the organization (Kanwal/Van Hoye 2023). Lievens and Slaughter (2016) showed that positive perceptions of instrumental (e.g., compensation, work atmosphere) and symbolic attributes (e.g. warmth, competence) increase the attractiveness of an organization as an employer.

Using HRM system strength theory and the employer branding literature, Kanwal and Van Hoye (2023) examined three process characteristics (i.e., employer brand distinctiveness, consistency, and consensus) in relation to instrumental and symbolic content attributes to understand employee reactions (i.e. employer attractiveness, organizational identification and employee ambassadorship). The results indicated that the process attributes of the employer brand are valuable resources for enhancing employees' identification with their organization. Distinctiveness and consistency are particularly helpful in increasing employees' attractiveness perceptions and display of positive ambassadorship.

Tanwar and Kumar (2019) confirmed that building a unique and strong employer brand to attract talent is a common business practice worldwide. According to Wang et al. (2022) it is necessary to investigate why certain types of employer

brands are more attractive than others. The authors identified different aspects of brands and their impact. Among the aspects they included, for example, organizational traits, managerial practices, HRM. Different aspects differ in values or relevance to job seekers through the intensity or visibility of brand advertising and the uniqueness of the brand messages (Küpper/Klein/Völckner 2021).

Work-life balance in virtual environment

Work-life balance is the relationship between a person's work and life and the point at which the demands of their employment and personal life are equal; work-life balance affects the level of work dedication of an employee (Korkmaz/Erdogan 2014). Crawford et al. (2019) state that integrating work and life has been a major focus of both management scholars and practitioners for the last two decades. The ability to balance work and private life is a pressing social issue, which has led to the development of scientific research needed for government policies, employment legislation and organizational policies and practices (Wilkinson/Tomlinson/Gardiner 2017). Work-life balance is a key factor for strong performance and higher job satisfaction (Talukder/Galang 2021). The attitudes and behaviours of employees are subject to their motivation, which provides the organization with a competitive advantage. Any anomaly between work and life has adverse consequences for employee performance.

Perceptions of work-life balance are different (Wayne/Matthews/Odile-Dusseau/Casper 2019). However, supervisor support is considered essential for balancing the work-life interface. It has been found that supervisors (such as managers) committed to work-life balance can act as leaders, they encourage subordinates to identify with them and internalize their beliefs and values (Adame/Capliure/Miquel 2016).

Talukder and Galang (2021) examined the relationship between supervisor support and employee performance and the mediating effects of work-life balance, job-life satisfaction, and organizational commitment. The results showed that supervisor support is positively related to employee performance, work-life balance, job and life satisfaction, and organizational commitment. On the other hand, work-life balance, job and life satisfaction, and organizational commitment are positively associated with employee performance.

Also Rothbard et al. (2021) state that work-life balance is a topic that attracts a lot of attention. According to them, two constructs contribute to balance: enrichment and depletion. They highlight four configurations of enrichment and depletion that promote different levels of work-life balance: (a) low enrichment and high depletion (no balance), (b) low enrichment and low depletion (minimal balance), (c) high depletion and high enrichment (balance) and d) low depletion and high enrichment (balance/flourishing).

Work-life balance resolves the existence of a conflict between one's role at work and the role outside of work (Bouwmeester/Kok 2018). Job satisfaction can be significantly impacted by this factor, as high demands or conflicts in life or between life and work can cause stress, burnout, turnover intentions, lack of engagement and a decrease in job satisfaction (Mazmanian/Orlikowski/Yates 2013). Individual and organizational elements may cause differences in work-life balance (e.g., high performing demands, project-based work, work overload, deadline conflicts, family problems, and having to take care of parents or family members).

A summary of work-life theories and models is provided by Bhat et al. (2023). The results of their study showed that work-life interactions and workplace factors influence employee engagement and exhaustion. Work-related expectations (emotional and time demands) must be taken into account to decrease work-family conflicts and create a good work-life balance. According to the study, telecommuting due to the COVID-19 pandemic has disrupted the line between personal and professional life and increased the risk of conflict. The study also highlighted the importance of work-life balance for telecommuting.

The main task during and after the coronavirus pandemic proven to be the adaptation to remote work while guaranteeing productivity and achieving outcomes (Nachmias/Hubschmid-Vierheilig 2021). This has created an urgent requirement to improve human resources capabilities (e.g. through training programmes). HRM practices focused on preparing employees and training them on the skills and standards needed to utilize the digital technology that is essential for remote work (Lee/Malik/Rosenberger III/Sharma 2020).

Pham et al. (2023) conducted a study in which they examined the moderating role of empowering leadership and the link between virtual training programs and employee outcomes in the context of remote work. A study showed that a digital skills training program improves employees' perceived organizational support, which, in turn, reduces work-to-family conflict. The study highlighted that, in the context of remote work, minimizing work-to-family conflict is considered a critical factor in promoting employee job satisfaction and performance.

Methods and materials

The data for this study was collected using electronic survey from 323 virtual managers working with their teams virtually international. The final number of respondents was selected using Cochran's formula. The data was collected from geographically diverse respondents who were working from differentiated locations worldwide. The survey questions were developed solely for this research based on similar research studies, such as Han and Beyerlein (2016), Eisenberg et al. (2019), Lombardi et al. (2021), Rogers et al. (2021), Liska (2022), Swart et al. (2022), Caputo et al. (2023), with specific focus on impact of work-life

balance and employer branding to commitment and performance. The concepts were designed based on studies by Shaik et al. (2021), Zaharie (2021), Zhang et al. (2022), Chang et al. (2023), Georganta et al. (2024). Based on the research conducted by previous studies, the questions were developed to cover factors that were mostly mentioned as affecting commitment and performance (practices, processes and relationships in virtual teams).

The survey contained six identification questions, followed by main sections with closed-ended Likert-scale sub-questions on welfare, work conditions, organizational support, workflow, recommendations, benefits, human resource (HR), reliability of team members and themselves, perception of employer branding, technology-related factors, possibilities for development, turnover and satisfaction. The Likert-type scale had five points starting with strong agreement on left side to strong disagreement on right end. To ensure the reliability and validity, all questions separately and the whole main part of the survey were tested by the Cronbach's Alpha (CA) reliability test. The test values for all tested items reached over 0.9. Therefore the survey and designed questions were evaluated as suitable for further statistical analyses. The Table 1 shows test results on reliability for core of the questionnaire (questions on work-life balance and employer branding of virtual teams).

Table 1 – Reliability of test results

Searched Areas	Questions in Sub-Areas	No of questions per Area	Reliability	Validity
Employer Branding in Virtual Management	Recommendation of the employer to friends and retention ability	7	CA 0.981	<0.05
	Quality of virtual interactions	11	CA 0.996	<0.05
Work-life balance of Virtual Teams	Policy of home office	4	CA 0.979	<0.05
	Distractions at home office	12	CA 0.997	<0.05
	Impact on performance	10	CA 0.984	<0.05
	Effects on psychic	6	CA 0.997	<0.05

Source: data processing

Sample

The data contains virtual managers who manage employees in virtual teams. Based on Cochran's test with $p = 0.5$ suggested minimum 254 responses. The questionnaire collected 323 full responses and thus sample is considered as representative. Respondents age group consisted of working ages (18–65 years) who are working fully in virtual environment. The characteristics of the sample is the following: 156 men (48.3 %), 167 women (51.7 %); 43.0 % of the respondents (139) were 21–38 years old, 43.3 % (140 respondents) were 39–56 years old

and 13.6 % (44 respondents) were 57–65 years old. Respondents were working from all continents: Africa, North America, South America, Asia, Europe, and Oceania. The main business were 18 % operations, 11 % support services/administrations, 10 % IT, 9 % finance, 6 % sales, manufacturing (5 %), quality (5 %), supply chain (4 %), marketing (4 %), legal (5 %), R&D (3 %), and HR (2 %). According to size of company, 19 % were small organizations (1–49 employees), 35 % medium-sized organizations (50–999 employees), 46 % in large organizations (over 1000 employees). The questionnaire was anonymous. Respondents' characteristics were used to analyse differences between company sizes, gender and age/generations of respondents.

Operationalization of results

The data matrix was checked for missing values which were excluded. Only full responses without doubt of respondents' integrity were used for further testing. The data were processed by statistical software (SPSS) to test reliability and validity. After the initial tests, data were evaluated by statistics (average, mean, minimum and maximum values, standard deviation). Second step were two-dimensional tests (Pearson's and Spearman's correlations, regression analysis). Finally, as all previous tests shown good fit of results and their validity and reliability, a multi-dimensional analysis was conducted (analysis of principal component and factor analysis). All data processing, testing and evaluation of outputs were conducted according to Anderson et al. (2019), Bell (2019) and Mishra et al. (2019).

To ensure relevance of data for multi-dimensional statistics, the Kaiser-Meyer-Olkin test was run. The test value reached over 0.8, and thus the data were considered appropriate and pertinent for further analysis. The output factors revealed by factor analysis are showing the main directions of sample behaviour in the searched areas. Results of factor analysis explain variability and dependence of the sample. Based on research prepositions, hypothetical factors were designed (see Table 1) and further tested by two and multidimensional statistics to confirm or modify the theoretical constructs. The prepositions for construct and groups of variables were designed in order to follow current literature and research in the area of virtual management, HRM, work-life balance, employee satisfaction, retention, performance management and commitment.

To design resultant factors the Maximum Likelihood Factor Analysis with Kaiser Varimax Rotation with a goodness of fit was used. The final factors were set based on the Kaiser-Guttman rule (i.e. substantial factors reaching value over 1). Further, the Sutin test was used to exclude factors that do not reach expected total variance. The value of correlation coefficients is interpreted based on the value and positive or negative loading of each item. Positive correlation coefficient explains a direct proportion; negative pointed at indirect proportion

between variables. To be accountable for analysis, the resultant value of variable had to reach over 0.3 (moderate correlation), as suggested by Anderson et al. (2019).

Results

The study aimed to reveal specifics of virtual team's management to define areas that are important for employees in respect to work-life balance and the employer branding. Attention was paid to factors affecting teams' commitment and performance. According to the results, performance and commitment is result of several factors. In respect to work-life balance, the most influential in the searched study is clear communication of career possibilities, plans and performance appraisal (relation to performance $r=0.501$, $p=0.000$) and fair treatment for opportunities and awards $r=0.504$, $p=0.000$). Other influential variables are training programs to improve performance ($p=0.377$, $p=0.000$), meeting etiquette suitable to hybrid work culture ($r=0.325$, $p=0.000$), sick-leave policies ($r=0.365$, $p=0.000$) and adjusted benefits ($p=0.309$, $p=0.000$). Variables relating to performance in aspect of employer branding, the most relevant are HR assistance ($r=0.447$, $p=0.000$), supportive supervisor ($r=0.428$, $p=0.000$), clear targets ($r=0.420$, $p=0.000$), clear policies and communication ($r=0.394$, $p=0.000$), and responsive corporate culture ($r=0.391$, $p=0.000$), see Table 2.

Table 2 – Correlations related to work-life balance and employer branding to performance

Hypothesis	Spearman's test	p-value	Correlation
Work-life balance on performance – clear communication of career possibilities and plans	0.501	0.000	Strong
Work-life balance on performance – performance appraisal	0.501	0.000	Strong
Work-life balance on performance – fair treatment for opportunities and awards	0.504	0.000	Strong
Work-life balance on performance – training programs to improve performance	0.377	0.000	Medium
Work-life balance on performance – meeting etiquette suitable to hybrid work culture	0.325	0.000	Medium
Work-life balance on performance – sick-leave policies	0.365	0.000	Medium
Work-life balance on performance – adjusted benefits	0.309	0.000	Medium weak
Employer branding on performance – HR assistance	0.447	0.000	Medium strong
Employer branding on performance – supportive supervisor	0.428	0.000	Medium
Employer branding on performance – responsive corporate culture	0.391	0.000	Medium

Source: data processing

In relation to commitment the most important factor affecting performance (Table 3) are possibilities of online training programs to improve performance ($r=0.455$, $p=0.000$), adjusting compensation and benefits ($r=0.353$, $p=0.000$) and focus on mental health ($r=0.355$, $p=0.000$). To brand the organizations, (potential) employees respond with commitment to clear policies and communication ($r=0.345$, $p=0.000$), supportive HR policies ($r=0.327$, $p=0.000$) and again, responsive corporate culture ($r=0.321$, $p=0.000$).

Table 3 – Correlations related to commitment to performance

Hypothesis	Spearman's test	p-value	Correlation
Commitment to performance – possibilities of online training programs	0.455	0.000	Medium strong
Commitment to performance – adjusting compensation and benefits	0.353	0.000	Medium
Commitment to performance – focus on mental health	0.355	0.000	Medium
Employer branding on commitment – clear policies and communication	0.345	0.000	Medium
Employer branding on commitment – clear communication	0.345	0.000	Medium
Employer branding on commitment – supportive HR policies	0.327	0.000	Medium
Employer branding on commitment – responsive corporate culture	0.321	0.000	Medium

Source: data processing

Based on the revealed significant correlations among variables related to employee commitment and performance, the data matrix was analysed further by multivariate statistics. The data file was tested by the Kaiser-Meyer-Olkin (KMO) test and resultant value exceeded 0.8, Bartlett's test p-value was 0.000 which confirmed that the construct is relevant and suitable for deeper analyses. To define final number of factors, Sutin test was applied. Outputs, that only slightly exceeded the required minimum values were not considered for the final factors.

Firstly, the area of work-life balance was studied. In total, 55.2 % of the variance was explained by the analysis. The analysis revealed three significant factors forming three main groups that shown up among the sample. The first factor groups main variables relevant for virtual teams to achieve their adequate mental health. The second factor shows that virtual teams are actually suffering by burnout syndrome in over 20 % of the sample. The third factor points out that women are paying attention especially to online training to improve their

performance and career and promotion plans. The detailed results are shown in Table 4.

Table 4 – Factors related to work-life balance of virtual teams

Variable/Factor	1	2	3
Gender (Female=1)	-0.106	0.058	0.875
Flexible schedule	0.649	0.082	-0.050
Prioritizing mental health	0.724	-0.013	-0.083
Online meeting etiquette suitable to online work	0.571	0.156	-0.034
Sick leave policies	0.619	-0.043	-0.096
Online training programs to improve performance	0.572	-0.004	0.403
Career path and promotion plan	0.615	-0.145	0.355
Additional benefits/adjusting compensation	0.737	-0.049	0.080
Burned out	-0.034	0.842	0.003
Difficulty concentrating	0.188	0.758	0.091
Emotionally drained	-0.017	0.837	0.003
No interest and pleasure in work	-0.070	0.732	-0.050
% of variance	24.639	21.500	9.086
Factor name	Physical and mental health	Burn out in virtual environment	Women Development

Source: data processing

The first factor is formed variables focusing on flexible schedule, focus on mental health, meeting etiquette relevant for virtual environment, sick leave policies, online trainings to improve performance, career plans and adjustable compensation. These variables are important for virtual teams to achieve long term mental and physical health and work-life balance. The factor describes approach of 25 % of the sample. This factor due to its scope was named Physical and mental health in virtual environment.

The second factor on the other hand revealed 22 % of the sample that is actually facing burn out syndrome that is caused by the virtual environment and lack of suitable culture, social distancing and lack of social contact. The factor consists of variables revealing difficulties in concentration for work tasks, negative feelings related to work, no pleasure at work, and burn out. This factor was named Burn out in the virtual environment. This factor identifies negative aspects of virtual environment and the necessity to address this phenomenon in virtual team management.

The third factor specifies women preferences in virtual teams. According to results, women place special attention to development programs, performance improvement and career or promotion plans. This is helping them to achieve positive emotions in virtual work environment. The factor grouped 9 % of the sample. Given the fact that 51 % of the whole sample were women, it shows significant number of women prioritizing this area. On the other hand, men had no specifics compare to the rest of the sample.

The second factor analysis focused on factors relevant for employer branding in virtual work environment. The analysis was considered relevant, as KMO test reached value 0.887, and Bartlett test significance level was 0.000. The analysis total variance is 54.4 %. Results are presented in Table 5. According to the results, all variables used for construct are important for branding of virtual workplace. Again, specific preferences of women were found containing focus on clear policies and communication, HR assistance and responsive corporate culture.

Table 5 – Factors related to employer branding of virtual environment

	1	2
Gender (F=1)	-0.129	0.814
HR assistance	0.643	0.325
Clear policies and communication	0.607	0.449
Attracting high-quality employees	0.699	0.111
Reinforcing corporate values to improve culture	0.644	0.350
Clear targets	0.729	-0.118
Supervisor helps in performance	0.678	-0.031
Fair treatment for opportunities, awards	0.766	0.006
Opportunity to grow at my current company	0.693	-0.189
Clear appraisal progress	0.719	0.069
% of variance	42.777	11.599
Factor name	Virtual workplace branding	Women focus on relationships

Source: data processing

The first factor confirmed the relevance of theoretical construct of variables affecting employer branding in virtual environment and to virtual teams. Virtual employees are paying attention to all proposed variables, i.e. HR assistance, clear policies and communication, corporate values and responsive culture, clear targets, available help from supervisors, fair treatment and equal opportunities, equal and fair treatment in award selection, opportunities to grow and clear appraisal. All mentioned variables reached high level of factor loadings (0.6 and

higher). This factor describes 43 % of the behaviour of the total sample. Based on the total loadings of the variables, it was named Virtual workplace branding.

The second factor specifies approach of women in virtual teams. The most important factors related to employer branding are communicated policies, access to HR assistance and open corporate culture. 12 % of the sample, thus 24 % of women are preferring the specified variables in virtual environment.

Based on the gender specifics, the researched area was also analysed to find differences between company sizes and age/generations of respondents. Statistically significant differences were found between generation X and younger generations (generations Y and Z). Younger generations behave more in similar manner and place more emphasis on employer branding and flexibility, especially on fair treatment, friendly supervisor or manager and opportunity to grow at current workplace. The elderly generation (generation X) referred more often to negative perceptions of virtual work and problems with focusing and performance in virtual environment. Regarding size of organizations, the statistically significant differences were found in the requirement for flexibility in small organizations compare to medium and large organizations. Other differences were not statistically significant.

Discussion

In the current environment, organizational leaders are faced with two interrelated trends, the exponential growth of information and communication technologies and the rise in global virtual teams. Avolio et al. (2000) found that e-leadership is a socio-technical process in which social influence mediated by advanced information technology produces changes in attitudes, thinking, feelings, behaviour and performance. Results of this paper confirm, that it is mainly communication and its openness that influence employee commitment and attract employees through employer branding. Advanced information technology, the rise in remote work and global virtual teams require the e-leader to have adequate e-competencies (Kerfoot 2010). In addition to e-competencies, e-leaders must act as motivators and mediators and manage tensions. This was confirmed by the analysis presented in this paper, as motivation and satisfaction are main predispositions of virtual teams' commitment and performance.

The structure of global virtual teams facilitates employee engagement, autonomy, freedom and flexibility in operations (Shaik et al. 2021). This paper confirms role of engagement and flexibility and adds possibilities for development. However, virtual teams often lack coordination, control, trust, social interaction, and there are no firm boundaries between work and home (Cascio/Shurygailo 2003). Moreover, use of information and communication technologies usually make impossible to reveal conflict or problem among team members (Davidaviciene/Al Majzoub 2022). Further, this paper revealed that lack of communica-

tion, flexibility and social interaction between team leader and team members lead to impossibility to focus, lower performance and in some cases to burn out syndrome. All these new challenges need to be addressed.

The success of a global virtual team requires an inclusive leader who can capture the best ideas, encourage and explore new ideas, use complementary skill sets, and create cohesion (Derven 2016). It is confirmed in this paper, that the role of leader and approach to employees, communication, fair treatment and appraisal are key to employees' commitment. An inclusive leader promotes empowerment, accountability, courage and humility. The team leader must be sensitive to the cultural environment and must be aware of its influence on the functioning of the team. Diverse cultural norms shape attitudes to assertiveness, hierarchy, conflicts, which have a direct relationship to the quality of team members' participation (Derven 2016).

Liska (2022) addressed the question of the performance of global virtual teams in comparison with the performance of differently configured teams (different level of virtuality). The aim was to evaluate the performance of the examined teams based on their work pace, delivery quality and communication efficiency, which are the primary drivers of overall performance (Prasad et al. 2017). This study revealed that the main variables affecting performance are mainly clear communication of career possibilities, plans and performance evaluation and fair treatment for opportunities and awards (r reaches over 0.5).

As Han and Beyerlein (2016) found, multinational virtual teams represent a relatively new organizational form in which trust is limited for two reasons – it is virtual collaboration in a global context. Typical factors contributing to team success (close physical location, common experiences and shared cultural backgrounds) are absent. Commitment therefore becomes a key element of team success in these teams. Based on the results of the presented research, commitment is mainly affected by communication and real ability of online training programs to improve performance, adjusting compensation and benefits and focus on mental health (correlations with commitment between 0.3 and 0.4). On the other hand, low levels of commitment are impacted by insufficient information sharing, and attempts to avoid interactions with team members (Kanawattanachai/Yoo 2007). Such behaviour leads to a decrease in team efficiency, which was confirmed also by this study.

Numerous studies on different types of employee commitment have emerged in recent decades (Cheng/Macaulay 2014). In the context of multinational virtual teams, it was confirmed that the development of relationships among team members and organization depends to a large extent on effective communication and interactions between group members. Along with Bodemer and Dehler (2011), group awareness allows group members to identify the personal cues and behaviours of collaborative partners during interactions. According to the theory of

group awareness (Gross et al. 2005), the individuals' awareness of the surroundings is essential in teamwork, especially when collaborating within multinational virtual teams (Cheng et al. 2021). The development of commitment in these teams mainly depends on timely responses and information sharing; a high level of communication openness impacts the perception of an individuals and the awareness of the whole group and also to individual and teams' performance. According to the results of this study, and in line with Cheng et al. (2021), openness and reliability thus represent the two main factors of trust.

Conclusions

This paper investigated the role of employer branding and work-life balance on virtual teams' performance and commitment. Based on the results, the main factor affecting performance and commitment is clear communication, possibility of career development, plans and performance appraisal, fair treatment in opportunities and awards and responsive culture. Commitment is mainly affected by training programs to improve performance, adjusting compensation and benefits and focus on mental health.

The main management approach relevant for virtual teams to achieve their adequate mental health is flexible schedule, meeting etiquette relevant for virtual environment, sick leave policies, online training to improve performance, career plans and adjustable compensation. On the other hand, the study confirmed that virtual teams are suffering by virtual environment and over 20 % are not able to focus, experience decrease in performance or burn out syndrome. Managers of virtual teams have to watch closely responses of their team members to identify such problems in the beginning to avoid the final stage of burn out and decrease of productivity.

Analyses confirmed different approach of women. They are paying attention especially to opportunities to improve their performance and career. Specific approaches of small organizations on flexibility were identified as well as younger employees (generations Y and Z) are paying attention especially to development and career opportunities, which is their main factor that brings them to virtual team and brands their organization.

Efficient virtual teams and virtual management should focus on promotion of communication of open culture, development and career opportunities, online meetings to boost performance and commitment and avoid problems of team members that are not satisfied with virtual environment and need further support to maintain their productivity and mental health. Mental health programs need to be part of virtual teams management, as one fifth of virtual employees are threatened by burn out syndrome.

Limitation of the study is its focus on ICT virtual organizations; the sample was selected to represent organizations focusing on management of virtual teams and the sample is representative. Managers of organizations should carefully plan personalized development, raising motivation, and commitment as those are keys to virtual teams' performance.

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