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**The Impact of Virtual Team Communication Tools on Collaboration in Digital-Marketing
Projects Among Freelancers in Riyadh**

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Abstract

Technology and remote work have not only changed the face of freelance industry, but they also seem to become the norm. This research explores the impact of virtual team communication tools on collaboration in digital-marketing projects among freelancers in Riyadh. Four questions with their respective hypotheses were proposed to assess correlations between different variables and strategies. A questionnaire was adapted to collect data from 54 digital-marketing freelancers in Riyadh. Trust, leaders' competences and communication tools were identified as independent variables, whereas team collaboration and effectiveness were identified as dependent variables. After processing the data of respondents via SPSS, the findings indicated a significant relationship between team members' willingness to provide feedback and support and the effectiveness of virtual digital-marketing teams. Furthermore, the presence of a common understanding of goals and teamwork significantly contributed to the success of projects. Similarly, the level of trust among team members exhibited a significant relationship with performance and collaboration. However, despite the key roles of flexibility and adaptability and their importance, they were not found to significantly promote team collaboration and effectiveness. The promising and insightful findings of this research suggest a number of useful recommendations that would contribute to the success of digital-marketing freelance projects, and they allude to some limitations in terms of other unresearched factors, variables and strategies that might play a more crucial role in enhancing the collaboration of virtual digital-marketing teams of freelancers, and hence their effectiveness. Future research could focus on exploring additional variables that may contribute to team success, such as communication patterns, leadership styles or technological infrastructure. By understanding these dynamics and

intricacies, digital-marketing freelancers can optimize team collaboration and maximize outcomes.

Keywords: virtual communication, communication tools, digital marketing, freelancers, team collaboration, project management

Introduction

Virtual teams have become increasingly important nowadays, especially in this technological interconnected world. This has become clearly noticeable, and there are several reasons leading to this phenomenon, such as the increasing need for a global collaboration, where freelancers constitute virtual teams coming from widely distributed regions around the world. This would pave the way for more creativity, innovation and problem-solving. Not to mention cost and time efficiency owing to physical offices and commuting are becoming unnecessary requirements in this mode of work.

Indeed, the contemporary work life-style has made it necessary to make transition to remote work in order to maintain productivity. Research, in general, indicates that a higher percentage of freelancers have welcomed and implemented remote work, while some organizations were unprepared to accept this new standard of performance. There are a number of issues hindering organizational adoption of remote work in some countries, such as cybersecurity and unpredictable energy supplies (Azasu & Babatunde, 2020). Bahrain, as opposed to Saudi Arabia and the United Arab Emirates, had the highest percentage of respondents who planned to work remotely in a poll carried out by the Gulf Cooperation Council (GCC).

Interestingly, the pandemic of COVID-19 has forced the workforce worldwide into a global experiment on remote work, regardless of the readiness of organizations and the inclination of employees. The pandemic crisis and its impact on all forms of work serve as an inspiration for this study. Particularly in this era, where the field of IT has magnificently developed, and organizations commenced to use the project-based methodology to complete their business duties, with communication management being of utmost importance.

In light of this perspective, there is a growing need to conduct research that is focused on freelancers to better understand their experiences in the remote working model, as well as to establish effective virtual-team communication practices. Nevertheless, the aim of this study is to identify, explore and analyze new variables that impact the efficiency and effectiveness of collaboration by digital-marketing freelancers in their projects in Riyadh; to explore the relation between virtual freelance industry and technological communication methods; and to uncover advantages and disadvantages that had not been previously recognized in the existing literature.

Problem Statement

The problem this research attempts to study is the impact of communication tools in the digital-marketing freelance industry on collaboration and to explore the nature of collaboration among virtual freelancers of digital-marketing in Riyadh. Even though collaboration is becoming increasingly vital, it encounters noticeable obstacles. The prevalence and significance of global virtual teams are on the rise, with a whopping 85% of respondents involved in virtual team work and acknowledging its crucial role in achieving business success. Predictably, approximately one-fifth of all respondents devote more than half of their workday to these teams (Solomon, C, 2016).

Succeeding the spread of the COVID-19 pandemic, the adoption of and adaptability to remote work have become necessary practices, leading numerous employees across various industries to transition to working from home. However, the individual experience of this shift varies depending on demographic factors and the specific nature of one's job (Karabulut Temel & Batmaz Yıldız, 2024). Following this pandemic, a unique opportunity to completely transform the future of work has arisen, offering a chance to actively influence the global workforce and

create a future that aligns with our aspirations (KARACHATZIS & PARAMESHWARAPPA, 2021).

Virtual teams actively engage in a diverse range of collaborative endeavors, including both formal and informal meetings facilitated by technological tools. According to Ashley (2019), proper and effective communication as well as wide application of virtual team communication tools can influence freelancing success. However, it is a challenging dynamic process for most freelancers. The same notion is supported by Sulbout & Pichault (2022), who, in their study, concluded that the success of freelancing is correlated with the effectiveness of the management of communication. Upwork is a good example in terms of being a freelancing platform, where businesses and professionals interact and exchange information effectively via the platform. The sudden, unprecedented change in the working environment and communication platforms has added to the profits of the freelancing company by increasing 12% to 19% in only a quadrant of 2019 (Karthirgugan, 2020).

Muszynska (2018) has also maintained that the effective communication management is the essence of a project, and it is more than essential to the success of the freelancing management. Understanding the needed methods and styles of the communication system is vital for the success of any project taking place in a remote work environment. Nevertheless, at its core, any type of communication is ineffective unless it achieves its intended aim. Similarly, there is a plethora of metrics by which to evaluate the efficacy of conversation.

The current literature does not seem to sufficiently examine the relation between collaboration, virtual teams and technology-driven communication management in the freelance industry. Moreover, there seems to be a gap in terms of understanding the interconnection

between the concepts of freelancers, virtual project environment and collaboration of teams involved.

Through the exploration of the impact of communication tools and the nature of virtual collaboration, valuable insights, recommendations and suggestions can be offered to researchers, practitioners, digital-marketing freelancers, influential decision-makers and policymakers, not only with regards to efficiency and effectiveness, but also in terms of better structuring the future of the freelance workforce industry.

Study Purposes

This study aims to focus on the impact of virtual team communication technologies or tools on collaboration in digital-marketing projects among freelancers in Riyadh, the capital of Saudi Arabia. This research is of paramount importance nowadays for several reasons. Firstly, it addresses the specific context and location of Riyadh, the capital city of Saudi Arabia, which has become home to a thriving freelance digital-marketing community. In doing so, this research can culminate in insights and recommendations relevant to the community of freelancers in Riyadh, allowing them to improve and develop their collaboration practices.

This research also has the aim of understanding the impact and degree of influence communication tools have on the virtual teams of freelancers who conduct digital-marketing projects. It is a rigorous scholarly attempt to unravel any existing strengths, weaknesses, threats or opportunities of both freelancers' behavior and the tools utilized while working virtually. Additionally, this research identifies current practices and suggests ways for improvement and development to assist digital-marketing freelancers in Riyadh to optimize their virtual communication management and, therefore, enhance project deliverables and outcomes.

Not only collaboration is an integral part of any project whether virtual or physical, it is also a result of successful communication. This research is designed to identify factors that facilitate or impede effective communication, which, in effect, would affect collaboration and team harmony. By doing so, this research can lead to the development of future strategies and guidelines that would enhance collaboration perceptions, project outcomes and the overall quality of digital-marketing practices.

This research intends to culminate in practical and real-life implications for digital-freelancers in Riyadh. The results, insights and recommendations of this research serve as a guide to improve their productivity, efficiency and innovation in terms of choosing and utilizing communication tools, leading to project outcomes of higher quality and optimized professional experience.

Current relevant literature and the responses of digital-marketing freelancers are essential components of this research which would serve as a scholarly continuation to identify potential gaps for future research endeavors. Therefore, this research aims to benefit from previous literature, contribute to the current and inspire the future via the contribution of a thorough, comprehensive understating of the topic.

In summary, conducting this research on the impact of virtual team communication tools on collaboration in digital-marketing projects among freelancers in Riyadh would make a substantial scholarly contribution and yield valuable and constructive results.

Study Questions

In order to propose valuable solutions to and good understanding of significant unresolved problems, it is not only crucial to possess extensive knowledge about the problem

itself, but to accurately identify the boundary separating existing knowledge from what is unknown. Therefore, that researchable questions arise from exploring the forefront of knowledge, not to mention that it has been noted that, in applied research, the questions are relatively straightforward, but obtaining the answers is arduous (Brian Haynes, 2006).

Given the viewpoint of this research, there is an increasing necessity to undertake research that specifically targets freelancers, aiming to gain deeper insights into their encounters within the remote working paradigm and establish efficient and effective communication practices for virtual teams. However, the objective of this study is to identify, examine, and analyze novel variables that influence the productivity and effectiveness of collaboration among digital-marketing freelancers in Riyadh. Not only this research seeks to explore the relation between and impact of the virtual technological communication methods on the collaboration of the digital-marketing freelancers, but to also understand the nature of the intricacies of those variables.

The effectiveness of collaboration among virtual teams is influenced by several key factors that need investigation. Firstly, the willingness of team members to offer feedback and support is a critical aspect to consider, and this can be concentrated on through the question of “How does team members' willingness to provide feedback and support impact the effectiveness of virtual teams?”. Understanding how this aspect impacts team effectiveness can shed light on the importance of open communication and mutual assistance within virtual teams.

Secondly, the presence of a common understanding of goals and teamwork is believed to significantly contribute to the success of virtual teams. Exploring the extent of this contribution can provide valuable insights into the role of shared objectives and collaborative efforts in

achieving desired outcomes. This can be achieved via answering the question of “To what extent does the presence of a common understanding of goals and teamwork contribute to the success of virtual teams?”.

Another vital factor to consider is the level of trust among team members. Examining how trust influences performance and collaboration within virtual teams can highlight the significance of building strong interpersonal relationships and fostering a sense of reliability in remote working environments among freelancers. A representative question of this perspective is “How does the level of trust among team members influence the performance and collaboration within virtual teams?”.

Lastly, the role of flexibility and adaptability in promoting team effectiveness within virtual teams is a crucial aspect to explore. Understanding how flexibility and adaptability positively impact team dynamics, outcomes and deliverables can provide guidance on optimizing team performance in ever-evolving virtual work settings, and this has led to the fourth question of “What role does flexibility and adaptability play in promoting team effectiveness in virtual teams?”.

In conclusion, since the formulation of the research question holds utmost significance in a research project (Farrugia et al., 2010), by delving into the implications of these four questions and relevant areas of inquiry, a deeper understanding of the complexities and nuances of virtual team effectiveness can be attained. Also, by inspecting factors and variables effectively, this can assist in coming up with creative solutions that would significantly contribute to identifying the challenges freelancers face in virtual communication, developing evidence-based solutions,

mitigating all risks that may arise as virtual team freelancers adopt and adapt to virtual tools, and resulting in effective collaboration among freelancers.

Research Hypotheses

The accessibility of virtual communication comes with a number of challenges in terms of coordination and collaboration, and this affects the generation of new ideas among the virtual team members, which nevertheless affects the productivity output (Dang, 2018). In addition, the potential for freelancers to feel isolated while working in their remote areas bring in the issue of social isolation (Bollestad et al., 2022), emphasizing the need to constantly adapt and be flexible to new technologies while maintaining a work-life balance, not to mention the difficulty of coordinating tasks among a large number of freelancers (Lisefski, 2019).

Hence, there are a number of variables and factors that play a key role in the dynamics of communication tools, virtual-team collaboration and projects in general. Therefore, the aforementioned research questions respectively generate four hypotheses that would limit our research and focus on specific areas of study.

As for the first hypothesis, it explores the relationship between team members' willingness to provide feedback and support and the effectiveness of virtual digital-marketing teams. Therefore, it is stated as in the following:

Null Hypothesis (H0): There is no significant relationship between team members' willingness to provide feedback and support and the effectiveness of virtual digital-marketing teams.

Alternative Hypothesis (H1): There is a significant relationship between team members' willingness to provide feedback and support and the effectiveness of virtual digital-marketing teams.

The second hypothesis is based on the second question which addresses the extent to which the presence of a common understanding of goals and teamwork contribute to the success of virtual teams. This hypothesis is illustrated as in the following:

Null Hypothesis (H0): The presence of a common understanding of goals and teamwork does not significantly contribute to the success of virtual digital-marketing teams.

Alternative Hypothesis (H1): The presence of a common understanding of goals and teamwork significantly contributes to the success of virtual digital-marketing teams.

By the same token, the third hypothesis examines the level of trust among team members and its influence on the performance and collaboration within virtual teams. This hypothesis is created as in the following:

Null Hypothesis (H0): There is no significant relationship between the level of trust among team members and the performance and collaboration within virtual digital-marketing teams.

Alternative Hypothesis (H1): There is a significant relationship between the level of trust among team members and the performance and collaboration within virtual digital-marketing teams.

Lastly, the fourth question seeks to probe the roles flexibility and adaptability play in promoting team effectiveness in virtual digital-marketing teams. The hypothesis to inspect the depth of this perspective is formed as in the following:

Null Hypothesis (H0): Flexibility and adaptability do not significantly promote team effectiveness in virtual digital-marketing teams.

Alternative Hypothesis (H1): Flexibility and adaptability significantly promote team effectiveness in virtual digital-marketing teams.

Since the primary aim of this research in terms of identifying, investigating and analyzing new factors that would impact the efficiency and effectiveness of collaboration among digital-marketing freelancers in Riyadh, this research endeavors to explore the connection between virtual technological methods applied virtually to communication management and their influence on the collaborative dynamics of digital-marketing freelancers. In order to achieve this, there is a necessity to gain a comprehensive understanding of the intricate nature of these variables and hypotheses, unraveling their complexities and nuances.

Theoretical Model

Communication plays a vital role in the success of freelancing endeavors. Ineffective communication management can have detrimental effects, including project failures, escalated expenses, project delays, and team conflicts. Freelancers, however, can optimize their business management in virtual communication through the prioritization of the "iron triangle" concept, which is a framework emphasizing the three fundamental variables of project management: cost, time, and quality. By effectively managing these factors, freelancers can enhance their prospects for achieving favorable outcomes in their projects.

The emergence of virtual teams and the noticeably increasing reliance on information and communication technologies have significantly changed the way individuals collaborate and work together. Today, for instance, there are many freelancers in the digital-marketing industry who work remotely, relying on virtual team communication tools for collaboration (Nunamaker et al., 2009). These virtual team communication tools have a substantial impact on the collaboration and effectiveness of freelancers (Baker, 2002).

The use of virtual team communication tools in digital-marketing projects among freelancers in Riyadh has several impacts on collaboration. Firstly, virtual team communication tools enhance the efficiency and speed of communication among freelancers (Sivunen & Laitinen, 2019). Additionally, managing virtual teams seems to differ from managing employees in a conventional office setting, and while remote work offers advantages, such as improved work-life balance through the ability to work from home, time efficiency gained by eliminating commuting, and access to top talent regardless of location, there are also distinct challenges encountered by virtual employees (Newman & Ford, 2020).

However, this research attempts to explore the Impact of virtual communication tools on collaboration in digital-marketing projects conducted by freelancers in Riyadh in light of transactional and interaction models, for they offer different perspectives on the nature of communication. Narula (2006) described the transactional models of communication, which is seen as a dynamic process where individuals actively engage in simultaneous responses. On the other hand, interaction models highlight the significance of linear feedback in communication interactions. Within transactional models, when one person, referred to as "A," is speaking, the other person, "B," actively generates messages or feedback. This feedback can be conveyed

through various channels, such as body postures, facial expressions, eye movements, hand gestures, spatial distance, and verbal language use. These nonverbal and verbal cues from "B" provide valuable information to "A" about the effectiveness and impact of their message.

Ultimately, both transactional and interaction models underscore the complexity and richness of communication, emphasizing the continuous exchange of information between individuals to achieve mutual understanding and effective communication outcomes.

While effective communication technology is vital for virtual teams, its presence alone does not ensure success. Leaders must account for the absence of nonverbal cues and tackle the lack of informal bonding and information exchange. Neglecting these aspects results in misunderstandings, decreased engagement, and diminished trust. Leaders must exert additional effort to align virtual employees with the organization's culture and objectives. (Newman & Ford, 2020).

Definition of Terms

There are some terminologies that appear frequently throughout this research, and they need to be clearly explained and interpreted. The most frequent and relevant ones are: virtual teams, freelancers, digital-marketing, project and virtual communication tools.

Virtual teams

The term "virtual team" refers to a combination of individuals who work together digitally while being physically located in different and geographically distant places, which makes it either impossible or more difficult to hold meetings in person. Some companies may decide to deploy remote teams due to its being efficient in terms of international commerce or other circumstances that prevent their employees from meeting in person (Argote et al., 2023).

Freelancers

There are numerous varieties of remote teams, including parallel teams, networking teams, and freelancing teams, to name but a few. The majority, however, of this research will focus on individuals working in freelance teams. A freelance team is a collection of independent contractors working together to complete a project. It is not uncommon for the freelancer team to have a variety of skills and expertise, and the freelance team members are normally specialized in particular aspects of the task(s). The members of the team are free to delegate responsibilities to one another and to focus on their own projects. Also, accountability and cooperation are typically understood as part of their agendas. Freelancers are typically employed by businesses to fulfill certain requirements because those teams enjoy capabilities that the hiring organization does not have access to internally (Freelance Team, 2022).

Digital-marketing

“Digital marketing” is terms that refers to the practice of promoting and advertising goods or services using digital technologies, such as the Internet, mobile devices, visual advertisements, and other electronic media. It has platforms that encompass both online and offline systems, with their role to facilitate the creation, promotion, and distribution of brand content through various digital channels to reach the intended audience (Puthussery, 2020).

Project

According to the Project Management Institute (2023), a project is “a temporary endeavor undertaken to create a unique product, service or result” (p. 4).

Virtual communication tools

Virtual communication encompasses various means of interaction such as emails, text messages, web chats, and other forms of communication that do not involve face-to-face interaction. In this context, it is equally crucial to maintain clarity and convey the appropriate tone as it is in in-person communication (Carion, 2022).

Limitations

Since this research seeks to demystify the significant intricacies and dynamics taking place at the interconnection of virtual-team communication technologies and their impact on cooperation and collaborative attitude among digital-marketing freelancers in Riyadh, it is crucial to acknowledge several research limitations. Firstly, the results may need to be more generalizable to a larger population compared to the one chosen for this research due to technical, tactical and regulation-wise constraints. Therefore, the sample approach was chosen to be convenient. Also, more reliable results would come from mixing methods, such as quantitative and qualitative to be able to reach a more scientifically satisfactory conclusion. Considering the total number of respondents, which 54, does give us an insightful glimpse into the nature and complexity of the subject, but it is not sufficient to form a well-established theory. Moreover, time frame is another limitation since the research is expected to be conducted under a period of around two months and this might not help encompass a larger sample, let alone regions, of digital-marketing freelancers. Future research, however, could address these limitations by examining the pros and cons of virtual team communication platforms and their impact on cooperation and collaborative attitudes in other organizational or regional contexts, using a more diverse sample, employing a range of data collection methods and adopting

research methodologies of mixed nature, such as combining the quantitative and qualitative research approaches.

Literature Review

Introduction

This research aims to fill a research gap by exploring the communication tools and its impact on virtual teams. As for virtual teams, they are geographically dispersed teams that operate across time zones. They rely on online communication due to limited physical contact (Lilian, 2014).

As technology rapidly evolves, communication technology has advanced, leading to an increase in communication levels through virtual communication tools. Consequently, the notion of virtual teams has emerged, characterized by their ability to operate beyond time and physical constraints. These teams utilize various communication tools such as email, telephone, groupware, and video conferencing, and are composed of members located in multiple geographical locations (Batırlık et al., 2022).

Although there is a substantial body of literature on managing virtual teams, limited research has been conducted to quantify the extent and significance of practices within contemporary organizations, and there are key factors that influence trust, information sharing, and communication in virtual teams, which in turn contribute to the team members' ability to achieve effectiveness and efficiency in their work (Bhat et al., 2017).

Dependent and Independent Variables

In a scientific experiment, the two primary variables are the independent variable and the dependent variable. The independent variable is under the control of the experimenter, while the dependent variable is the one that responds to changes in the independent variable. These

variables can be connected through a cause-and-effect relationship. When the independent variable is altered, it directly impacts the dependent variable (Helmenstine, 2021).

Upon reviewing the pertinent literature, several variables emerge. Trust, leaders' competence, communication technologies are among the independent variables identified, while team cooperation is identified as the dependent variable (Chi et al., 2012). Likewise, the capacity of members to share information can be identified as an independent variable that has a positive impact on the group's performance, a dependent variable (Beranek & Martz, 2005). Similarly, another study identifies such variables as team size and task interdependency, which play a moderating role in shaping specific task-related skills and team-level characteristics (Ünal, 2022).

As far as the concepts of communication tools, projects and virtual freelance industry are concerned, dependent and independent variables abound in relevant literature. They are widely present and clearly play a crucial role in research investigations by enabling the examination and analysis of relationships between various elements. In this research, variables related to the tools and methods of virtual communication among digital-marketing freelancers in Riyadh are identified and studied in order to comprehend their impact and consequences on team collaboration.

Summary of Past Studies

Any organizational communication strategy would impact the managerial effectiveness, and it serves as a key link to sustainability (Arop et al., 2018). On the other hand, Ismail and Yaser (2019) define communication with respect to freelancing as the reciprocal sharing of information and processes to create a platform that is understandable for freelancers.

The Social Presence theory proposed by Bruce Christie, Ederyn Williams, and John Short in the *Social Psychology of Telecommunications* (Williams & Christie, 1976) explains how well the participants' presence is fundamental during the process of communication. According to the Social Presence theory, various media can convey different outcomes, including nonverbal clues, such as eye contact, body language, facial emotions and vocal intonation, and this would provide the impression that an audience is participating. However, the degree to which this is achieved varies. For example, compared to other media, videoconferencing and the telephone have a higher social presence. Thus, this makes them more appropriate for relational communication tasks like building and maintaining interpersonal relationships, which inevitably involve talking about social and personal issues and ideas (Williams & Christie, 1976). In virtual communication among freelancers, the consideration of receptive and available traits impacts the timeliness of information (Shakeria & Khalilzadeh, 2020). Receptivity is demonstrated by the accuracy of the message's interpretation and the actions that follow. For the communication cycle to be deemed complete, the recipient of the message must verify receipt (Karl et al., 2021). In simple terms, communication is never complete in case someone communicates and there are no responses.

Reliable and timely information is essential for freelancers to complete their daily obligations. Information is useful for making plans and decisions, mitigating risks and monitoring progress. Shakeria and Khalilzadeh (2020) claim that the efficacy of a freelance team is contingent upon the information that is received and shared. Since decisions are often based on what is currently known, the ability of the virtual freelance team to complete tasks efficiently is increased when timely, reliable information is provided methodically (Rajhans, 2018). Team members could find it challenging to disseminate information quickly enough if they have a lot going on outside of scheduled sessions.

Inadequate planning, work habits, unforeseen work requirements and information creation challenges are just a few of the variables that might cause information to be shared outside of its intended timeline (Oh et al., 2018). Delays in communicating information can have major detrimental effects, as stated by Agrawal et al. (2023). According to Rajhans (2018), a prevalent kind of miscommunication in stakeholder relationship management is information delay, which has an adverse effect on the success of freelancers. One common and unavoidable communication issue in a remote work setting is information-sharing delays. Misunderstandings resulting from inadequate information led to poor relationships among independent contractors (Rajhans, 2018). According to Muszynska (2019), the virtual freelancing team should adjust communication management during the freelancing activities.

Through honest communication, freelancers can create a feeling of purpose that unites them to share knowledge and work toward shared goals (Pirju, 2018). According to Rahjans (2019), teams of virtual freelancers operate more effectively when their members regularly supply accurate and up-to-date information. Consequently, this raises the probability that freelancers will finish their work on schedule and improves the overall team performance.

This theory also goes into great detail in terms of shared documents and other project collaborative tools, which makes it possible for freelancers from all over the world to collaborate on the same project. In an ideal world, freelancers and contributors would collaborate in real-time. According to Gupta et al. (2020), these technologies promote active participation and presence on both sides in all facets of freelancing. They also support the development of a communal online workspace that fosters a sense of community among distant workers. The

social presence theory states that since most freelancers have improved their communication skills, their teams are more cohesive.

Williams and Christie's (1976) social presence theory concurs with the constantly changing Transactional Model of Communication, which sociologist Dean C. Barnlund proposed. Information is exchanged in both directions during communication between the sender and the recipient. For virtual teams operating in digital-marketing, the communication solutions of freelancers are essential because they facilitate the sharing of project data and procedures. According to Bragg (2021), a transactional model of communication makes it easy for people to identify a wide range of potential obstacles to cooperation amongst geographically independent contractors.

According to Battisti et al. (2022), it is not achievable to predict that every single new and existing freelancing employee will be in possession of all of the necessary tools and applications and this acts as a challenge. Furthermore, the theories need to take into account the particular communication characteristics and preferences of individuals. That being said, some freelancers are extroverted, and they likely have a higher output than those who are introverted. When all of these variables are addressed within a virtual team, the communication hurdles and obstacles encountered are reduced. As a result, the activities that are associated with freelancing will be effective.

Research Methodology

Introduction

This research is conducted to provide insights, guidelines and recommendations into the impact of information and communication technology on the notion of collaboration among freelancers in virtual digital-marketing projects. It specifically focuses on digital-marketing team collaboration within virtual settings. In order to attain this aim of research, a quantitative approach was adopted and employed to gather numerical data, aiming to describe and illustrate the factors and variables influencing shared understanding and cooperation in virtual teams. Therefore, a questionnaire was utilized as the primary instrument. Its focus was on measuring constructs such as communication usage, interaction mode, team level of trust, shared understanding, and team performance.

Research Design

Saunders et al. (2007) maintain that studies that aim to establish causal relationships between variables are commonly referred to as explanatory studies, concentrating on closely examining a specific situation or problem with the intention of providing explanations for the relationships observed between variables.

This research, nevertheless, aims to explore and quantitatively test the existence of any connection between the dependent variables and independent variables. As for the dependent variables, they are identified as the effectiveness of virtual digital-marketing teams; the success of virtual digital-marketing teams; performance and collaboration within virtual digital-marketing teams; and, lastly, team effectiveness within the virtual digital-marketing settings. The independent variables, however, are the team members' willingness to provide feedback and

support; the presence of a common understanding of goals and teamwork; the level of trust among team members; and flexibility and adaptability of digital-marketing teams.

Population of the Study

This research is based on the assumption that Riyadh, the capital of Saudi Arabia, is becoming a thriving economic hub of the Gulf Cooperation Council (GCC) region. Corporations coming from all around the world have come and established their headquarters in Riyadh, with over 200 international organizations moving to Riyadh, following the Saudi government new policy that became effective around January 1, 2024 (*200+ Firms Move HQs to Riyadh ahead of Saudi Govt Contract Policy*, 2023).

After searching all available freelancing platforms, such as Mostaq, Khamsat, Ikhedemah, Maharati, Shoghlonline, Kafiil, Khadamatt and Sawawork, it is found that only three of those are still active platforms: Mostaq, Khamsat and Kafiil. It has become clear that not all of them work properly, and contact trials have failed to inquire about the frequency of presence of freelancers, and the accuracy of the active number of freelances along with their locations.

However, another difficulty with respect to identifying the population became apparent. There was no reliable method to ascertain the exact number of active freelancers in Riyadh, Saudi Arabia.

Sample Characteristics

The research questions, hypotheses and variables serve the researcher as a guide to identify the sample characteristics. Thus, they have to be (1) freelancers, (2) based in Riyadh, (3)

specialized in digital-marketing and (5) interested to conduct their tasks following the project management concepts and standards.

Sample Size Determination

It was near to impossible to find an exact number of the freelancers who are based in Riyadh, and who, simultaneously, carry out digital-marketing projects. After further research, the researcher decided to focus on a telegram group that has 296 freelancers of different nationalities, among them was 58 freelancers who are based in Riyadh, and out of them only 54 active participants had voluntarily agreed to answer the questionnaire.

Choosing the convenient sample was inescapable to the researcher. It seems to be the best affordable method in this context of research, and in light of the constraints present throughout the process of defining, determining and identifying the population. According to Johnson and Christensen (2008), researchers may find themselves obliged to apply the convenient sample.

Data Collection Procedures

After delving into relevant literature, it became clear that using questionnaire distribution as a main source of data collection seems to be the most appropriate method and tool to be administered, especially with this particular research. It is a preferred tool for this research due to a number of reasons, such as its being affordable, quick to complete and uncomplicated, resulting in precise estimates for variables and outcomes (Parvathi, 2024). Moreover, distributing questionnaires will generate valuable results that can help in acquiring depth knowledge about people's various characteristics (Beatty et al., 2019).

In this research, the researcher relied on a questionnaire that is adopted and adapted from Kanike's (2023) PhD dissertation, which has been reviewed and tried and tested through two stages. After the first stage or pilot questionnaire, Kanike (2023) refined some questions to make it more accurate in reflecting the respective population. The variables and factors of the adopted questionnaire bear some similarity with this research about "The Impact of Virtual Team Communication Tools on Collaboration in Digital-Marketing Projects Among Freelancers in Riyadh", not to mention the channels employed during the distribution of the questionnaire, such as google form and social media. In appendix A, there is a sample of this questionnaire is attached.

This questionnaire has three main dimensions, where each one focuses on a certain area of inquiry. Firstly, part one tries to understand the relevant social intricacies that are inherently present with freelancer, such as age distribution, gender distribution, educational background and marital status. Secondly, there is part two, which explores team effectiveness in the virtual-marketing projects conducted by freelancers. Lastly, there is part three which attempts to elicit data related to the usage of Information and Communication Technology (ICT) in terms of both hardware (i.e. devices) and software in the context of virtual projects that freelancers carry out.

Method of Analysis

Since the approach of this research is quantitative, which is a deductive methodology by definition, it did not only adopt Kanike's (2023) questionnaire, but also elicited data that can be analyzed statistically. Therefore, the appropriate method for data analysis was Statistical Package for Social Sciences (SPSS). This software is useful here, and due to the type of data collected,

variables and hypotheses, it assisted the researcher to focus on three analysis methods: descriptive analysis, correlation, and chi-square.

Practical Study

Introduction

In order to evaluate the impact of virtual team communication tools on collaboration in digital marketing projects among freelancers in Riyadh, it is necessary to evaluate different aspects of communication and collaboration in a virtual team environment. The selected sample was drawn from a digital-marketing telegram group, with a total of 54 participants who agreed to answer the questionnaire. This sample size, regardless being a convenient sample, provides considerable insights into the dynamics of virtual-team communication and cooperation within projects in the specific context of the digital-marketing industry in Riyadh.

Research Findings

The nature of this research necessitates the examination of a number of demographic factors pertinent to the variables and hypotheses upon which this research is based. Such relevant variables include age, gender, educational background and marital status as illustrated in Table 1.

Age Distribution

As shown in Table 1, respondents were composed of freelancers conducting digital-marketing projects in Riyadh. Among the 54 respondents, 50% who constituted the majority were within the age range of 30-39, which would suggest that this age group makes a significant portion of digital-marketing freelancers. Another 31.5% of respondents were in the age group of 18-29, followed by 14.8% aged 40-49, and lastly 3.7% were at the age of 50 and above. This

would imply age is relatively of a diverse distribution with respect to digital-marketing freelancers, with one notable concentration in the age group of 30-39.

Gender Distribution

As Table 1 shows, female respondents constituted 59.3%, while male respondents were 40.7%. This percentage would indicate a relatively balanced gender representation irrespective of the fairly higher female percentage. The gender-inclusive nature of the sample suggests that the insights gathered in this research are representative of the perspectives and experiences of both male and female freelancers conducting digital-marketing projects.

Educational Background

Undertaking an endeavor such as a project would require a certain level of qualifications and expertise for freelancers engaged in digital-marketing projects to have. As the information in Table 1 shows, 66.7% of respondents had Bachelor's degree; 20.4% with Master's degree and 7.4% were Doctorate holders. This distribution indicated that the majority were Bachelor's degree holders, and it also showed that freelancers have attained high level of education. This distribution suggests that freelancers enjoyed a broad arsenal of skills and knowledge at their disposal, especially with regard to facilitation and cooperation.

Marital Status

By the examination of personal life, and marital status in particular, a general understanding of work and personal characteristics can be deduced, including the level of commitment, availability and communication preferences. The results of this sample showed that

that majority, 51.9% were single; 37% were married; 5.6% were divorced and 5.6% chose not to disclose their marital status. This diverse distribution shows how varied social lives of freelancers, and they seemed to agree on the need for more flexibility and inclusivity due to the various lifestyle preferences and commitments. This rich and varied social life of freelancers would have its influence on virtual communication strategies.

Table 1

General Characteristics of the Respondents

Demographic	Frequency	Percent
Age		
18-29	17	31.5
30-39	27	50.0
40-49	8	14.8
50+	2	3.7
Gender		
Male	22	40.7
Female	32	59.3
Education		
High School	3	5.6
Bachelor's Degree	36	66.7
Master's Degree	11	20.4
Doctorate	4	7.4
Marital Status		
Single	28	51.9
Married	20	37.0
Divorced	3	5.6
Prefer not to say	3	5.6

Research Questions

The importance of this research is reflected in the four underlying questions proposed to tackle a contemporary problem of the relation between communication and cooperation in a virtual setting. There are aspects that emerge due to wide range of variables included in the questions.

The 1st question focuses on the willingness of team members to manifest cooperation through providing feedback and support, which can substantially impact the effectiveness of virtual digital-marketing teams. However, its associated hypotheses examine inspect the probability of existence for the relationship between team members' willingness to deliver feedback and support and the overall effectiveness of virtual digital-marketing teams.

Question two of this research seeks to investigate the existence of a common understanding of goals and harmony of teamwork towards accomplishing project success. The relevant hypotheses have the aim of determining the relationship between the common understanding and whether or not it leads to the success of the collective effort exerted by the digital-marketing team.

The 3rd question of this research addresses the level of trust among team members and its inherent relation to performance and cooperation within digital-marketing teams. It, in particular, tries to discover if level of trust would impact performance and collaboration; whether or not trust can serve as a catalyst or barrier towards achieving performance of higher quality and cooperation of seamless nature within digital-marketing teams. This question underscores the nuanced relationship, dynamics and underlying mechanics shaping the virtual digital-marketing endeavors.

Lastly, question four delves into the notion of flexibility and adaptability and their roles in promoting effectiveness within virtual digital-marketing teams. The hypotheses associated with this question aim to assess whether flexibility and adaptability contribute to the effectiveness of the virtual digital-marketing teams or not. This question, nonetheless, attempts to uncover the underlying multifaced dynamics attached to the ability to adapt to changing circumstances and the presence of flexibility and their impact on the overall effectiveness of

virtual digital-marketing teams. The corresponding null hypothesis assumes that flexibility and adaptability do not significantly promote the effectiveness of virtual digital-marketing teams. Further, this hypothesis leads to a rigorous examination of whether the ability to maintain adaptability and sustain flexibility in virtual settings holds any substantial influence on team effectiveness, questioning the assumption that asserts that these traits, in particular, are essential drivers of success in any digitally-mediated work environment.

Through the statistical analysis of these questions together with their respective, associated hypotheses, a clear understanding of the factors involved can be reached, satisfactorily results can be achieved with regard to the role and effect of cooperation in the digital-marketing projects carried out by freelancers in Riyadh.

Hypothesis I

The Null hypothesis (H0) states that there is no significant relationship between team members' willingness to provide feedback and support and the effectiveness of virtual digital-marketing teams. Conversely, the alternative hypothesis (H1) argues that there is a significant relationship between team members' willingness to provide feedback and support and the effectiveness of virtual digital-marketing teams.

Table 2 below illustrates the connection between team members' willingness to provide feedback and support and the effectiveness of virtual digital-marketing teams. Among the 54 respondents, six strongly agreed; 23 agreed; 22 remained neutral; and only three disagreed. Residuals, nevertheless, indicate the disparity between the observed and expected frequencies. As for negative residuals, they suggest under-representation, while positive residuals indicate over-representation. However, the chi-square test was applied to assess the significance of the

relationship, and it yielded a statistic of 24.370 with 3 degrees of freedom and a resulting p-value of 0.000.

The analysis suggests a statistically significant relationship between team members' willingness to provide feedback and support and the effectiveness of virtual digital-marketing teams. The rejection of the H0 is supported by the chi-square test results and observed frequencies, and it underscores the importance of the willingness of team members to provide feedback and support to foster team effectiveness within virtual digital-marketing environments.

Table 2

Willingness to Provide Feedback and Support and the Effectiveness of Virtual Digital-Marketing Freelancers

	Observed N	Residual
Strongly Agree	6	-7.5
Agree	23	9.5
Neutral	22	8.5
Disagree	3	-10.5
Total	54	
Chi-Square		24.370a
DF		3
Asymp. Sig.		0.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 13.5.

Willingness to perform tasks of other team members. Table 3 below describes the degree of team members' readiness to undertake the tasks of their colleagues within the context of virtual digital-marketing work environment. Frequencies in this table represent the distribution of responses regarding willingness to perform others' tasks, while the chi-square test assesses

whether there is a significant association between this willingness and team effectiveness. The frequencies depict the distribution of responses regarding team members' willingness to perform tasks of other team members. As indicated below, among the 54 respondents, nine strongly agreed; 22 agreed; 17 were neutral; four disagreed and two strongly disagreed. The chi-square test yielded a statistic of 26.926 with 4 degrees of freedom, resulting in a p-value of 0.000 which indicates a significant relationship between team members' willingness to perform tasks of other team members and the effectiveness of virtual digital-marketing teams, as it falls below the conventional threshold of 0.05. Thus, the H0 is rejected, suggesting that there is indeed a significant relationship.

Table 3

Willingness to Perform Tasks of Other Team Members

	Observed N	Residual
Strongly Agree	9	-1.8
Agree	22	11.2
Neutral	17	6.2
Disagree	4	-6.8
Strongly Disagree	2	-8.8
Total	54	
Chi-Square		26.926a
DF		4
Asymp. Sig.		0.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 10.8.

Willingness to provide feedback to other team members. Table 4 below illustrates team members' inclination to offer feedback to their virtual digital-marketing peers. The frequencies highlight the distribution of responses pertinent to this willingness, while the chi-square test evaluates whether this willingness significantly impacts team effectiveness. Further, it

presents the distribution of responses regarding team members' willingness to give feedback to others. Among the 54 respondents, 15 strongly agreed; 19 agreed; 13 were neutral; five disagreed and two strongly disagreed. The chi-square test yielded a statistic of 18.593 with four degrees of freedom, resulting in a p-value of 0.001. With the p-value falling below 0.05, the H0 is rejected, indicating a significant relationship between willingness to give feedback and team effectiveness.

Table 4

Willingness to Give Feedback to Other Team Members

	Observed N	Residual
Strongly Agree	15	4.2
Agree	19	8.2
Neutral	13	2.2
Disagree	5	-5.8
Strongly Disagree	2	-8.8
Total	54	
Chi-Square		18.593a
DF		4
Asymp. Sig.		0.001

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 10.8.

Willingness to adjust strategies. Table 5 presents the willingness of team members to appropriately adapt strategies within virtual digital-marketing teams. The frequencies show the distribution of willingness, while the chi-square test depicts whether readiness for adaptation correlates significantly with team effectiveness. Among the 54 respondents, ten strongly agreed; 18 agreed, 13 remained neutral, eight disagreed and five strongly disagreed. The chi-square test yielded a statistic of 9.148 with four degrees of freedom, resulting in a p-value of 0.058. As the p-value exceeds 0.05, the researcher fails to reject the H0, suggesting no significant relationship between willingness to adjust strategies and team effectiveness.

Table 5***Willingness to Adjust Strategies***

	Observed N	Residual
Strongly Agree	10	-0.8
Agree	18	7.2
Neutral	13	2.2
Disagree	8	-2.8
Strongly Disagree	5	-5.8
Total	54	
Chi-Square		9.148a
DF		4
Asymp. Sig.		0.058

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 10.8.

Willingness to offer constructive feedback. Table 6 illustrates the willingness of team members to provide constructive feedback on their peers' work or tasks within virtual digital-marketing settings. The frequencies present the distribution of responses regarding willingness, while the chi-square test assesses whether it has a significant impact on team effectiveness. The frequencies depict the distribution of responses regarding team members' willingness to offer constructive feedback. Among the 54 respondents, 11 strongly agreed; 26 agreed; 12 remained neutral; four disagreed and one strongly disagreed. The chi-square test generated a statistic of 34.704 with four degrees of freedom, resulting in a p-value of 0.000. With the p-value falling below 0.05, the researcher rejects the H₀, indicating a significant relationship between willingness to offer constructive feedback and team effectiveness.

Table 6***Willingness to Offer Constructive Feedback***

	Observed N	Residual
Strongly Agree	11	0.2
Agree	26	15.2
Neutral	12	1.2
Disagree	4	-6.8
Strongly Disagree	1	-9.8
Total	54	
Chi-Square		34.704a
DF		4
Asymp. Sig.		0.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 10.8.

Willingness to plan the team's work process. Table 7 inspects team members' readiness to engage in planning the work process within virtual digital-marketing teams. The frequencies outline the distribution of responses regarding this willingness, while the chi-square test determines whether it significantly influences team effectiveness. As indicated, among the 54 respondents, ten strongly agreed; 23 agreed; 17 remained neutral; three disagreed and one strongly disagreed. The chi-square test resulted in a statistic of 31.926 with four degrees of freedom and a p-value of 0.000. As long as the p-value below 0.05, the H0 is rejected, indicating a significant relationship between the willingness to plan the team's work process and the team effectiveness.

Table 7***Willingness to Plan the Team's Work Process***

	Observed N	Residual
Strongly Agree	10	-0.8
Agree	23	12.2
Neutral	17	6.2
Disagree	3	-7.8
Strongly Disagree	1	-9.8
Total	54	
Chi-Square		31.926a
DF		4
Asymp. Sig.		0.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 10.8.

Willingness to ensure others stay on track. Table 8 demonstrates team members' willingness to ensure their peers stay on track despite changes affecting virtual digital-marketing teams. The frequencies illustrate the distribution of responses concerning willingness, while the chi-square test ascertains whether it correlates significantly with team effectiveness. As in Table 8 below, among the 54 respondents, 11 strongly agreed; 24 agreed; ten chose to be neutral; seven disagreed and two strongly disagreed. The chi-square test resulted in a statistic of 24.704 with 4 degrees of freedom and a p-value of 0.000. Since the p-value is below 0.05, the researcher rejects the H₀, indicating a significant relationship between willingness to ensure others stay on track and team effectiveness.

Table 8***Willingness to Ensure Others Stay on Track***

	Observed N	Residual
Strongly Agree	11	0.2
Agree	24	13.2
Neutral	10	-0.8
Disagree	7	-3.8
Strongly Disagree	2	-8.8
Total	54	
Chi-Square		24.704a
DF		4
Asymp. Sig.		0.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 10.8.

Hypothesis II

The H0 suggests that common understanding of goals and teamwork does not significantly contribute to the success of virtual digital-marketing teams, whereas H1 states that common understanding of goals and teamwork significantly contributes to the success of virtual digital-marketing teams. Additionally, the H0 posits that shared comprehension of goals and teamwork within virtual digital-marketing teams does not substantially enhance team success. This hypothesis disputes the notion that cohesive team dynamics, characterized by a collective understanding of project objectives and effective cooperation play a key role in driving the deliverables, outcomes and achievements of virtual digital-marketing endeavors. By statistically testing this hypothesis, the researcher aims to ascertain whether a lack of alignment in the perceptions of team members regarding goals and teamwork has an insignificant impact on the overall success of projects conducted in virtual environments. This hypothesis sets the stage for an exploration into the intricate interplay between shared goals, collaborative teamwork, and the

ultimate effectiveness of virtual digital-marketing teams, offering insights into the factors that contribute to project success in digitally-mediated work settings.

The Presence of a common understanding of goals and teamwork. Table 9 exhibits the relation between the presence of a shared understanding of goals and teamwork dynamics on the one hand, and the overall success of virtual digital-marketing teams on the other. It aims to assess the alignment of team members' perceptions of goals and teamwork with the effectiveness and outcomes of virtual digital-marketing endeavors, and whether or not the team perceptions of goals and teamwork affect the outcomes of freelancers. As portrayed below, among the 54 respondents, nine strongly agreed; 24 agreed; 19 remained neutral and two disagreed. The chi-square test generated a statistic of 21.704; a three-degrees of freedom and a p-value of 0.000. Since the p-value is less than 0.05 and no cells have expected frequencies less than 5, there is substantial evidence to reject the H0. This leads to the existence of a significant relationship between a common understanding of goals and teamwork and the success of virtual digital-marketing teams.

Table 9

The Presence of a Common Understanding of Goals and Teamwork

	Observed N	Residual
Strongly Agree	9	-4.5
Agree	24	10.5
Neutral	19	5.5
Disagree	2	-11.5
Total	54	
Chi-Square		21.704a
DF		3
Asymp. Sig.		0.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 13.5.

Common understanding of team goals. Table 10 reveals the extent of alignment among team members as to their collective goals in virtual digital-marketing projects. It attempts to elucidate the implications shared understanding of team goals would have on team cohesion, collaboration and, ultimately, the success of digital-marketing endeavors in virtual environments. The distribution of responses shows that 12 respondents strongly agreed; 22 agreed; 14 remained neutral; five disagreed, and one strongly disagreed. The chi-square statistic is of 24.704 and four degrees of freedom, and the p-value is 0.000. Considering the p-value is less than 0.05 and no cells have expected frequencies less than 5, there is compelling evidence to reject the H0. This is an indication that there is a substantial relationship between a common understanding of team goals and the success of virtual digital-marketing teams.

Table 10

The Team has a Common Understanding of Its Goals

	Observed N	Residual
Strongly Agree	12	1.2
Agree	22	11.2
Neutral	14	3.2
Disagree	5	-5.8
Strongly Disagree	1	-9.8
Total	54	
Chi-Square		24.704 ^a
DF		4
Asymp. Sig.		0.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 10.8.

Common understanding of team's environment. Table 11 showcases the extent to which team members possess a shared understanding of the environment in which they operate as virtual digital-marketing freelancers. By exploring the consistency of perceptions regarding

the team's environment, light is shed on how this common understanding influences both team dynamics and project outcomes. The distribution displays 12 respondents who strongly agreed; 24 agreed; nine remained neutral; seven disagreed and 2 strongly disagreed. The chi-square test, with a statistic of 25.074 and four degrees of freedom, yielded a p-value of 0.000. With the p-value being less than 0.05 and no cells have expected frequencies less than 5, reliable evidence materializes to reject the H₀, suggesting a significant relationship between a common understanding of the team's environment and the success of virtual digital-marketing teams.

Table 11

Team Possession of a Common Understanding of the Team's Environment

	Observed N	Residual
Strongly Agree	12	1.2
Agree	24	13.2
Neutral	9	-1.8
Disagree	7	-3.8
Strongly Disagree	2	-8.8
Total	54	
Chi-Square		25.074 ^a
DF		4
Asymp. Sig.		0.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 10.8.

Embrace of common goal with teamwork. Table 12 signifies the probability of the existence of a common overarching goal agreed upon by the team members and its integration within the teamwork in virtual digital-marketing environment. It also seeks to explore whether individual goals align or contradict with a collective team goal, and whether this impacts collaboration, communication and the team effectiveness. Table 12 below shows that among the 54 respondents, 14 strongly agreed; 22 agreed; 15 were neutral; two disagreed and one strongly

disagreed. The chi-square test resulted in a statistic of 30.259, four degrees of freedom and a p-value of 0.000. Since the p-value is less than 0.05 and no cells have expected frequencies less than 5, there is credible evidence to reject the H0, which, in effect, highlights a significant relationship between a common goal with teamwork and the success of virtual digital-marketing teams.

Table 12

Embrace of a Common Goal With the Teamwork

	Observed N	Residual
Strongly Agree	14	3.2
Agree	22	11.2
Neutral	15	4.2
Disagree	2	-8.8
Strongly Disagree	1	-9.8
Total	54	
Chi-Square		30.259 ^a
DF		4
Asymp. Sig.		0.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 10.8.

Hypothesis III

The H0 presumes the absence of any significant relationship between the level of trust among team members and the performance and collaboration within virtual digital-marketing teams. H1, alternatively, alludes that there is a significant relationship between the level of trust among team members and the performance and collaboration within virtual digital-marketing teams. This hypothesis challenges the premise that trust plays a substantial role in shaping team dynamics and outcomes in virtual settings. It conjures that variations in trust levels among team

members have no discernible impact on the performance metrics and collaborative efforts. After analysis and testing, this hypothesis aims to evaluate whether trust is a key determinant of success or merely a peripheral factor in the context of virtual team performance and collaboration.

Impact of the level of trust on performance and collaboration within virtual digital-marketing teams of freelancers. Table 13 indicates the observation of trust and its influence on team members' performance and collaboration within virtual digital-marketing settings, with its goal to uncover to what extent varying degrees of trust would impact the effectiveness of teamwork and the performance outcomes. Through the analysis of observed frequencies and chi-square tests, insights are offered in regard to the pivotal role of trust in shaping the dynamics of virtual team environments and its implications to achieve common goals. It can be noted through the observed frequencies depicting the distribution of responses that four respondents strongly agreed; 20 agreed; 23 were neutral; four disagreed and three strongly disagreed. The chi-square test statistic is 35.815 with four degrees of freedom, generating a p-value of 0.000. Most of all, no cells have expected frequencies less than 5 which ensures the validity of the analysis. This significant chi-square value suggests the existence of a strong association between the notion of trust among virtual team members in respect of both performance and collaboration.

Table 13

Impact of the Level of Trust on Performance and Collaboration Within Virtual Digital-Marketing Teams of Freelancers

	Observed N	Residual
Strongly Agree	4	-6.8
Agree	20	9.2
Neutral	23	12.2
Disagree	4	-6.8
Strongly Disagree	3	-7.8
Total	54	
Chi-Square		35.815 ^b
DF		4
Asymp. Sig.		0.000

b. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 10.8.

Trust in knowledge and abilities of other team members. Table 14 demonstrates the level of trust team members have in the knowledge and abilities of their virtual digital-marketing peers. It delineates the extent to which trust in the capabilities of team members influences collaboration and performance outcomes. By examining the observed frequencies and chi-square tests, this table provides valuable insights as to the relationship between trust in team members' expertise and the effectiveness of collaborative efforts within virtual team settings. The observed frequencies shows that five respondents strongly agreed; 23 agreed; 17 stayed neutral; six disagreed and three strongly disagreed. The chi-square test resulted in a statistic of 28.222 with four degrees of freedom, and a p-value of 0.000. Since there are no cells having expected frequencies less than 5, the significance of the relationship between trust in team members' knowledge and abilities and team outcomes is evident. This clearly underscores the importance

of trust in encouraging effective collaboration and performance within virtual digital-marketing teams.

Table 14

Knowledge and Abilities of Other Team Members

	Observed N	Residual
Strongly Agree	5	-5.8
Agree	23	12.2
Neutral	17	6.2
Disagree	6	-4.8
Strongly Disagree	3	-7.8
Total	54	
Chi-Square		28.222 ^a
DF		4
Asymp. Sig.		0.000

Trust in team efforts to reach goals. Table 15 assesses the extent to which virtual digital-marketing team members trust each other's efforts to reach common goals. It aims to analyze the impact of trust in team efforts on the achievement of shared objectives and overall team performance. Through the analysis of observed frequencies and chi-square tests, this table offers good insights about the role of trust in fostering cooperation, coordination and goal attainment within virtual digital-marketing environments. The observed frequencies show that nine respondents strongly agreed; 26 agreed; 13 remained neutral; three disagreed and three strongly disagreed. The chi-square test statistic is 33.407 with four degrees of freedom, resulting in a p-value of 0.000. Since there are no cells have expected frequencies less than 5 which ascertain the reliability of the analysis. This significant chi-square value indicates the existence of a substantial relationship between trust in team efforts and the achievement of shared goals

within virtual digital-marketing teams, and this highlights the key role of trust in fostering effective collaboration and performance.

Table 15

Trust in Team Efforts to Reach Goals

	Observed N	Residual
Strongly Agree	9	-1.8
Agree	26	15.2
Neutral	13	2.2
Disagree	3	-7.8
Strongly Disagree	3	-7.8
Total	54	
Chi-Square		33.407 ^a
DF		4
Asymp. Sig.		0.000

Hypothesis IV

The H0 presumes that flexibility and adaptability do not significantly promote team effectiveness in virtual digital-marketing teams, whereas the H1 assumes that flexibility and adaptability significantly promote team effectiveness in virtual digital-marketing teams.

Effectiveness of databases in virtual digital-marketing projects by freelancers. In Table 16, we investigate the utilization of databases within virtual digital-marketing teams to understand their role in developing team effectiveness. With the analysis of the frequency of using database software, such as MySQL or MongoDB, this table attempts to determine the impact of databases on collaboration, data management and the overall team performance in virtual digital-marketing environments, and to explore the usage of databases within virtual digital-marketing teams, especially with regard to how often team members utilize databases for

various purposes. The observed frequencies indicate that 15 respondents never used databases; 29 sometimes used them and ten always used them. The chi-square test resulted in a statistic of 10.778 with two degrees of freedom, resulting in a p-value of 0.005. The H₀ is rejected, and this suggests that taking advantage of databases significantly impact team effectiveness in virtual digital-marketing settings.

Table 16

Effectiveness of Databases in Virtual Digital-Marketing Projects by Freelancers

	Observed N	Residual
Never	15	-3.0
Sometimes	29	11.0
Always	10	-8.0
Total	54	
Chi-Square		10.778 ^a
DF		2
Asymp. Sig.		0.005

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 18.0.

Effectiveness of e-mails in virtual digital-marketing projects by freelancers. Table 17 clarifies the significance of e-mail communication in a virtual digital-marketing setting and its influence on team effectiveness. By the examination of the frequency of e-mail usage among team members, ranging from never to always, Table 17 attempts to remark the role of e-mails in advancing collaboration, information sharing, and project coordination within virtual digital-marketing teams. The observed frequencies imply that only one respondent never used e-mails; 21 sometimes used them, and 32 always used them. The chi-square test yielded a statistic of 27.444 with two degrees of freedom, resulting in a p-value of 0.000. This statistically significant result suggests that e-mail usage might have some influence on team effectiveness.

Table 17***Effectiveness of E-mails in Virtual Digital-Marketing Projects by Freelancers***

	Observed N	Residual
Never	1	-17.0
Sometimes	21	3.0
Always	32	14.0
Total	54	
Chi-Square		27.444 ^a
DF		2
Asymp. Sig.		0.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 18.0.

Effectiveness of programming among virtual digital-marketing freelancers. Table 18 reports on the frequency of programming activities within virtual digital-marketing teams to assess their impact on team effectiveness. Through the analysis of the extent to which team members engage in programming tasks, this table aims to uncover the relationship between having a good programming background and the overall team performance in virtual environments, and to attest the frequency of team members' engagement in programming tasks together with their literacy of programming. The observed frequencies show that 14 respondents never engaged in programming; 28 sometimes did and 12 always did. The chi-square test generated a statistic of 8.444 with two degrees of freedom, which resulted in a p-value of 0.015. This result decisively refutes the H₀, which suggests that the skill of programming as well as its virtual communication applications may significantly promote team effectiveness within virtual digital-marketing environments.

Table 18***Effectiveness of Programming Among Virtual Digital-Marketing Freelancers***

	Observed N	Residual
Never	14	-4.0
Sometimes	28	10.0
Always	12	-6.0
Total	54	
Chi-Square		8.444 ^a
DF		2
Asymp. Sig.		0.015

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 18.0.

Effectiveness of search engines and its usage by virtual digital-marketing

freelancers. Table 19 comments on the extent of utilizing search engines to comprehend their role in promoting team effectiveness. As indicated in the table, by looking into the frequency of using search engines like Google or Bing for various purposes, their significance is analyzed with regard to facilitating project processes, problem-solving and knowledge acquisition within projects in the context of virtual digital-marketing environments. The observed frequencies declares that two respondents never used search engines; 20 sometimes used them; and 32 always used them. The chi-square test yielded a statistic of 25.333 with two degrees of freedom, resulting in a p-value of 0.000. This statistically significant result emphasizes the key role of the search-engine usage and its effect on team effectiveness.

Table 19***Effectiveness of Search Engines and Its Usage by Virtual Digital-Marketing Freelancers***

	Observed N	Residual
Never	2	-16.0
Sometimes	20	2.0
Always	32	14.0
Total	54	
Chi-Square		25.333 ^a
DF		2
Asymp. Sig.		0.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 18.0.

Effectiveness of social media (e.g., Twitter, Facebook) utilised virtual digital-marketing freelancers. In this table, the researcher surmises that the application of social media platforms impacts team effectiveness. By the analysis of the frequency of digital-marketing teams' engagement with social media tools, such as Twitter or Facebook, Table 20 contends that they play a vital role in fostering communication, networking and collaboration for team members in projects operating within virtual digital-marketing settings. As demonstrated in the table below, the observed frequencies indicate that three respondents never used social media; 18 sometimes used it; and 33 always used it. The chi-square test yielded a statistic of 25.000 with two degrees of freedom, which resulted in a p-value of 0.000. Besides being statistically significant, this result conclusively rejects the H₀, suggesting that the application of social media platforms in projects conducted by virtual digital-marketing teams may significantly promote team effectiveness.

Table 20***Effectiveness of Social Media Utilized by Virtual Digital-Marketing Freelancers***

	Observed N	Residual
Never	3	-15.0
Sometimes	18	0.0
Always	33	15.0
Total	54	
Chi-Square		25.000 ^a
DF		2
Asymp. Sig.		0.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 18.0.

Effectiveness of simulations applied by virtual digital-marketing freelancers. Table 21 displays the frequency of virtual digital-marketing teams' applying simulation software, and in doing so, this part of the research seeks to understand its role in promoting team effectiveness. Through the assessment of the extent to which team members frequently engage in simulation activities, this table uncovers the relationship between simulation-based approaches and overall team performance in virtual digital-marketing environments. It also analyzes how often team members utilize simulations for various purposes. The observed frequencies show that 22 respondents never used simulations; 21 sometimes did and 11 always did. The chi-square test yielded a statistic of 4.111 with two degrees of freedom, resulted in a p-value of 0.128. While being not statistically significant, this result upholds that the usage of simulations may not decisively refute the null hypothesis.

Table 21***Effectiveness of Simulations Applied by Virtual Digital-marketing Freelancers***

	Observed N	Residual
Never	22	4.0
Sometimes	21	3.0
Always	11	-7.0
Total	54	
Chi-Square		4.111 ^a
DF		2
Asymp. Sig.		0.128

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 18.0.

Effectiveness of vlogs and blogs utilized by virtual digital-marketing freelancers.

This table investigates the utilization of vlogs and blogs applied by virtual digital-marketing teams to estimate their impact on team effectiveness. By analyzing the frequency of accessing vlogs and blogs for the sake of gaining information, knowledge sharing and learning purposes, Table 22 uncovers the role of multimedia content in enhancing collaboration, communication and problem-solving utilized by virtual teams. This helps to explore the frequency of using vlogs and blogs utilized by virtual digital-marketing teams for the purpose of communication and information sharing. The observed frequencies indicate that 19 respondents never used vlogs and blogs; 26 sometimes did and nine always did. The chi-square test yielded a statistic of 8.111 with two degrees of freedom, which resulted in a p-value of 0.017. Being statistically significant, this result rejects the H₀, which implies that taking advantage of vlogs and blogs may significantly promote team effectiveness when utilized by virtual digital-marketing teams.

Table 22***Effectiveness of Vlogs and Blogs Utilized by Virtual Digital-Marketing Freelancers***

	Observed N	Residual
Never	19	1.0
Sometimes	26	8.0
Always	9	-9.0
Total	54	
Chi-Square		8.111 ^a
DF		2
Asymp. Sig.		0.017

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 18.0.

Effectiveness of audio/video chat in virtual digital-marketing projects. In Table 23, we explore the frequency of using audio and video chat platforms during digital-marketing projects conducted by the freelancers. By looking into such chat platforms as Skype or Google Meet, we would be able to understand their role in promoting team effectiveness. This item attempts to grasp the extent to which team members engage in real-time communication via audio and/or video channels, and this table shows an evaluation of the impact of synchronous communication on collaboration, decision-making and project outcomes in virtual environments. The observed frequencies reveal that 10 respondents never used audio/video chat; 27 sometimes used it and 17 always used it. The chi-square test yielded a statistic of 8.111 with two degrees of freedom, resulting in a p-value of 0.017. In addition to being statistically significant, this result conclusively rejects the H₀, implying that the usage of audio/video chat tools may significantly promote team effectiveness when applied by virtual digital-marketing teams.

Table 23***Effectiveness of Audio/Video Chat in Virtual Digital-Marketing Projects***

	Observed N	Residual
Never	10	-8.0
Sometimes	27	9.0
Always	17	-1.0
Total	54	
Chi-Square		8.111 ^a
DF		2
Asymp. Sig.		0.017

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 18.0.

Effectiveness of smartphones and tablets used by virtual digital-marketing

freelancers. This table explains the usage of smartphones and tablets and their influence on the effectiveness of virtual digital-marketing freelancers. By analyzing the frequency of using mobile devices for work-related activities, communication and task management, Table 24 displays the role of mobile technology in fostering flexibility, promoting accessibility and increasing productivity virtual of digital-marketing teams. Therefore, this table examines how often team members utilize these devices for communication, collaboration and task management. The observed frequencies indicate that one respondent never used smartphones and tablets; 22 sometimes did and 31 always did. The chi-square test yielded a statistic of 26.333 with two degrees of freedom, resulting in a p-value of 0.000. This statistically significant result indicates that the usage of smartphones and tablets may play a role in team effectiveness.

Table 24***Effectiveness of Smartphones and Tablets Used by Virtual Digital-Marketing******Freelancers***

	Observed N	Residual
Never	1	-17.0
Sometimes	22	4.0
Always	31	13.0
Total	54	
Chi-Square		26.333 ^a
DF		2
Asymp. Sig.		0.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 18.0.

Effectiveness of Instant messaging/text chat used by virtual digital-marketing

freelancers. Table 25 explores the significance of instant messaging and text chat platforms, such as Messenger or WhatsApp utilized by virtual digital-marketing teams of freelancers and their impact on overall team effectiveness. By examining the frequency of using these communication tools for real-time messaging and collaboration, this table aims to assess their role in promoting quick information exchange, team coordination and decision-making in virtual digital-marketing environments. Thus, Table 25 explores the frequency of using instant messaging/text chat platforms within virtual digital-marketing teams, and analyzes how often team members utilize these platforms for real-time communication and collaboration. The observed frequencies show that two respondents never used instant messaging/text chat; 19 sometimes used it and 33 always used it. The chi-square test generated a statistic of 26.778 with two degrees of freedom, resulting in a p-value of 0.000. This is statistically significant, hence the H0 is rejected. This, however, concludes that the usage of the instant messaging/text chat

platforms significantly promotes team effectiveness in the context of virtual digital-marketing projects conducted by freelancers.

Table 25

Effectiveness of Instant Messaging/Text Chat Used by Virtual Digital-Marketing

Freelancers

	Observed N	Residual
Never	2	-16.0
Sometimes	19	1.0
Always	33	15.0
Total	54	
Chi-Square		26.778 ^a
DF		2
Asymp. Sig.		0.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 18.0.

Effectiveness of Internet browsers used by virtual digital-marketing freelancers. In Table 26, the researcher investigates the frequency of using Internet browsers to understand their role in supporting the effectiveness of virtual digital-marketing freelancers. By looking into the extent to which team members rely on web browsers for research, accessing online resources and project-related activities, this table provides an evaluation of the significance of web browsing in facilitating information discovery, knowledge sharing, data access, research, workflow efficiency and, ultimately, task execution. The observed frequencies indicates that one respondent never used Internet browsers; 14 sometimes did and 39 always did. The chi-square test yielded a statistic of 41.444 with two degrees of freedom, resulting in a p-value of 0.000. This statistically

significant result emphasizes that the usage of Internet browsers may contribute to team effectiveness.

Table 26

Effectiveness of Internet Browsers Used by Virtual Digital-Marketing Freelancers

	Observed N	Residual
Never	1	-17.0
Sometimes	14	-4.0
Always	39	21.0
Total	54	
Chi-Square		41.444 ^a
DF		2
Asymp. Sig.		0.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 18.0.

Effectiveness of printers and scanners in virtual digital-marketing projects by freelancers. Table 27 examines the utilization of printers and scanners within virtual digital-marketing environments to assess their potential impact on team effectiveness. By analyzing the frequency of using printing and scanning gadgets for document management, data sharing and task completion, Table 27 uncovers the role of a traditional-office setting in supporting work processes and collaboration among virtual digital-marketing freelancers. This table, indeed, investigates the usage of printers and scanners in virtual digital-marketing projects, and it analyzes how often team members utilize these devices for document management and processing. The observed frequencies indicate that 13 respondents never used printers and scanners; 20 sometimes did and 21 always did. The chi-square test yielded a statistic of 2.111 with two degrees of freedom, resulting in a p-value of 0.348. This result is not statistically significant, which emphasizes that the usage of printers and scanners may not significantly promote team effectiveness among freelancers conducting virtual digital-marketing projects.

Table 27***Effectiveness of Printers and Scanners in Virtual Digital-Marketing Projects by******Freelancers***

	Observed N	Residual
Never	13	-5.0
Sometimes	20	2.0
Always	21	3.0
Total	54	
Chi-Square		2.111 ^a
DF		2
Asymp. Sig.		0.348

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 18.0.

Effectiveness of translation apps in virtual digital-marketing projects by freelancers.

Table 28 explores the frequency of using translational electronic tools, such as Google Translator, and whether it has any effect on the work of virtual digital-marketing freelancers. It is assumed to help in understanding their role in promoting team effectiveness. By investigating the extent to which team members utilize translation software for language support, communication facilitation and cross-cultural collaboration, this table provides an assessment of the impact of translation tools on overcoming language barriers and enhancing collaboration among virtual teams. This table analyzes how often team members utilize translation tools for language support and communication. The observed frequencies reveal that two respondents never used translation tools; 18 sometimes did and 34 always did. The chi-square test yielded a statistic of 28.444 with two degrees of freedom, resulting in a p-value of 0.000. This statistically significant result suggests that the usage of translation tools may significantly lead to team effectiveness in virtual digital-marketing projects.

Table 28***Effectiveness of Translation Apps in Virtual Digital-Marketing Projects by Freelancers***

	Observed N	Residual
Never	2	-16.0
Sometimes	18	0.0
Always	34	16.0
Total	54	
Chi-Square		28.444 ^a
DF		2
Asymp. Sig.		0.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 18.0.

Effectiveness of applying note-taking software in virtual digital-marketing projects by freelancers. Table 29 investigates the usage of note-taking software, such as OneNote or Evernote. It evaluates to what extent virtual digital-marketing freelancers apply them in projects, and whether or not it has an influence on their teams' effectiveness. By analyzing the frequency of using note-taking applications in order to organize information, document discussions and capture ideas, Table 29 unravels the role of digital note-taking in supporting knowledge management, information retention and, ultimately, team coordination in virtual environments. The observed frequencies show that 19 respondents never used note-taking software; 23 sometimes did and 12 always did. The chi-square test yielded a statistic of 3.444 with two degrees of freedom, resulting in a p-value of 0.179. This result is not statistically significant, highlighting that the usage of note-taking software may not significantly promote team effectiveness within virtual digital-marketing teams.

Table 29

***Effectiveness of Applying Note-Taking Software in Virtual Digital-Marketing Projects
by Freelancers***

	Observed N	Residual
Never	19	1.0
Sometimes	23	5.0
Always	12	-6.0
Total	54	
Chi-Square		3.444 ^a
DF		2
Asymp. Sig.		0.179

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 18.0.

Effectiveness of smartphone apps in virtual digital-marketing projects by

freelancers. Table 30 examines the frequency of using smartphone apps within virtual freelancing digital-marketing teams to understand their impact on team effectiveness. By analyzing the extent to which team members rely on mobile applications for task management, communication and accessing project-related resources, this table recognizes the role of smartphone apps in promoting flexibility, accessibility and productivity in virtual digital-marketing settings, and it analyzes how often team members utilize apps for various purposes, such as communication, project management and cooperation. The observed frequencies show that four respondents never used smartphone apps; 17 sometimes did and 33 always did. The chi-square test yielded a statistic of 23.444 with two degrees of freedom, resulting in a p-value of 0.000. This statistically significant result verifies the usage of smartphone apps, which significantly promote team effectiveness within virtual digital-marketing projects conducted by freelancers.

Table 30***Effectiveness of Smartphone Apps in Virtual Digital-Marketing Projects by Freelancers***

	Observed N	Residual
Never	4	-14.0
Sometimes	17	-1.0
Always	33	15.0
Total	54	
Chi-Square		23.444 ^a
DF		2
Asymp. Sig.		0.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 18.0.

Effectiveness of presentations to the virtual digital-marketing freelancers. In Table 31, the utilization of presentation software, such as Prezi or PowerPoint is investigated in order to understand its role in promoting team effectiveness. By the evaluation of the frequency of creating and sharing presentations for the purpose of conveying ideas, delivering project updates and facilitating discussions, this table assesses the impact of presentation tools on communication, information dissemination and collaboration in virtual freelancing environments, and it analyzes how often team members utilize presentation tools for sharing information, conducting meetings and presenting project updates. The observed frequencies indicate that three respondents never used presentation software; 27 sometimes did and 24 always did. The chi-square test yielded a statistic of 19.000 with two degrees of freedom, resulting in a p-value of 0.000. This statistically significant result posits that the usage of presentation software may significantly promote team effectiveness within virtual digital-marketing settings.

Table 31.***Effectiveness of Presentations to the Virtual Digital-Marketing Freelancers***

	Observed N	Residual
Never	3	-15.0
Sometimes	27	9.0
Always	24	6.0
Total	54	
Chi-Square		19.000 ^a
DF		2
Asymp. Sig.		0.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 18.0.

Effectiveness of excel in the virtual digital-marketing projects by freelancers. This table delves into the frequency of using spreadsheet applications, particularly Microsoft Excel, by the virtual digital-marketing freelancers for the purpose of assessing its impact on team effectiveness. By examining the extent to which team members utilize Excel for data analysis, task tracking and project management, Table 32 evaluates the role of spreadsheets in facilitating organization, analysis and decision-making processes, and it explores the frequency of using spreadsheet software, such as Microsoft Excel, within virtual digital-marketing settings as a means to analyze data, plan for projects and track tasks. The observed frequencies reveal that five respondents never used Excel; 25 sometimes did and 24 always did. The chi-square test yielded a statistic of 14.111 with two degrees of freedom, resulting in a p-value of 0.001. This statistically significant result suggests that the usage of Excel may significantly promote team effectiveness within virtual digital-marketing environments.

Table 32***Effectiveness of Excel in the Virtual Digital-Marketing Projects by Freelancers***

	Observed N	Residual
Never	5	-13.0
Sometimes	25	7.0
Always	24	6.0
Total	54	
Chi-Square		14.111 ^a
DF		2
Asymp. Sig.		0.001

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 18.0.

Effectiveness of podcasts utilized in the virtual digital-marketing projects by freelancers. Table 33 explores the utilization of podcasts utilized by virtual digital-marketing freelancers and their influence on team effectiveness. By analyzing the frequency of listening to podcasts for professional development, knowledge sharing and keeping abreast of the industry trends, this table aims to uncover the role of podcasts in supporting continuous learning, idea generation and team cohesion in virtual freelancing environments, and it analyzes how often team members utilize podcasts for learning, knowledge sharing and staying updated on industry trends. The observed frequencies show that 15 respondents never used podcasts; 29 sometimes did; and ten always did. The chi-square test yielded a statistic of 10.778 with two degrees of freedom, resulting in a p-value of 0.005. This statistically significant result suggests that the usage of podcasts may significantly promote team effectiveness within virtual digital-marketing settings.

Table 33***Effectiveness of Podcasts Utilized in the Virtual Digital-Marketing Projects by******Freelancers***

	Observed N	Residual
Never	15	-3.0
Sometimes	29	11.0
Always	10	-8.0
Total	54	
Chi-Square		10.778 ^a
DF		2
Asymp. Sig.		0.005

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 18.0.

Effectiveness of online storage in the virtual digital-marketing Projects by

freelancers. In Table 34, we investigate the frequency of using online storage services, such as Dropbox or Google Drive, within virtual digital-marketing teams to understand their impact on team effectiveness. By analyzing the extent to which team members rely on cloud storage for file sharing, collaboration, and version control, this table aims to evaluate the role of online storage in facilitating accessibility, data security, and collaboration in virtual team settings. This table explores the frequency of using online storage services within virtual digital-marketing teams. It analyzes how often team members utilize platforms like Dropbox or Google Drive for storing, sharing, and collaborating on documents and files. The observed frequencies indicate that 4 respondents never use online storage, 21 sometimes do, and 29 always do. The chi-square test yields a statistic of 18.111 with 2 degrees of freedom, resulting in a p-value of 0.000. This statistically significant result suggests that the usage of online storage services may significantly promote team effectiveness within virtual digital-marketing teams.

Table 34***Effectiveness of Online Storage in the Virtual Digital-Marketing Projects by Freelancers***

	Observed N	Residual
Never	4	-14.0
Sometimes	21	3.0
Always	29	11.0
Total	54	
Chi-Square		18.111 ^a
DF		2
Asymp. Sig.		0.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 18.0.

Research Recommendations

The analysis of virtual-team communication tools and their impact on cooperation in digital-marketing projects among freelancers in Riyadh has provided us with valuable insights. It clearly demystifies the dynamics of virtual teamwork within this economically emergent context, which is the virtual-freelancing industry. This research has based its fundamental assumptions upon four questions, where each one has its own focus areas of factors, variables and implications. Furthermore, each question generates two respective hypotheses, one is null and the other one alternative. Interestingly, throughout the process of examining these four research questions and their associated hypotheses, key factors and variables interact within virtual teams of freelancers, and they impact the effectiveness and collaboration in virtual digital-marketing environments.

The results of hypothesis testing indicate significant relationships between several key variables and team effectiveness. Firstly, regarding team members' willingness to provide feedback and support, our findings reject the null hypothesis, suggesting that there is indeed a

significant relationship between these factors and the effectiveness of virtual digital-marketing teams. This underscores the importance of fostering a supportive and communicative team environment to enhance project outcomes.

Secondly, the presence of a common understanding of goals and teamwork emerged as another significant factor contributing to team success. The rejection of the null hypothesis in this regard emphasizes the importance of alignment in team members' perceptions and objectives, highlighting the role of shared goals and effective teamwork in driving project success within virtual environments.

Moreover, the analysis of trust levels among team members revealed a significant relationship with both performance and collaboration within virtual teams. This finding underscores the importance of cultivating trust, especially in communication tools, among team members to facilitate effective communication, cooperation and, most of all, project success in virtual settings.

Lastly, while the notions of flexibility and adaptability are often considered essential traits for team effectiveness, our analysis suggests that these factors may not significantly promote team effectiveness within virtual digital-marketing teams. Despite their statistically significant chi-square value, the observed data seem to better align with the H0, indicating that flexibility and adaptability may not play as substantial a role in promoting team effectiveness as initially hypothesized.

This research opens the doors to recognize valuable insights for digital-marketing freelancers in Riyadh. It, further, offers actionable recommendations for enhancing collaboration and project outcomes within virtual-team settings. By recognizing the significance of factors and

variable contributing to the process virtual digital-marketing communication, a such as feedback, shared goals and trust, stakeholders can better leverage virtual team communication tools to optimize cooperation and drive success in digital-marketing projects.

Based on the results from the analysis of virtual-team communication tools and their impact on cooperation in digital-marketing projects among freelancers in Riyadh, the following recommendations can be relied on to enhance collaboration and project outcomes within virtual-team settings.

Foster a supportive and communicative team environment. Encourage team members to provide feedback and support to each other through the fast and easy-to-use communication tools. Create and promote the usage of various channels for open communication and ensure that team members feel comfortable sharing their thoughts and ideas. This will help enhance the effectiveness of virtual digital-marketing projects conducted the freelancers.

Establish a common understanding of goals and teamwork. Ensure that all team members have a clear understanding of the project goals and objectives and are well literate in ICT. Highlight the importance of discussion facilitation to align perceptions and objectives among team members. This shared understanding will contribute to team success in virtual environments.

Cultivate trust among digital-marketing freelancers. Emphasize the importance of trust within virtual digital-marketing projects conducted by freelancers. Also, it is of paramount importance to encourage team members, and freelancers in particular, to build and sustain trust throughout the project journey by being reliable, transparent and collaborative. Trust does not

only foster effective communication, cooperation, but it transitions the project journey to its success destination in virtual settings.

Pay attention to communication tools. Select communication tools that promote efficient and effective collaboration. Consider tools that facilitate real-time communication, document sharing and task management. Regularly evaluate and monitor the effectiveness of the chosen tools throughout the freelancing project and make adjustments as needed.

Encourage regular team interactions. Schedule regular team meetings or check-ins to maintain engagement, check the general health of the project and foster a sense of belonging among team members. These friendly interactions can help build healthy relationships, improve communication and strengthen collaborative attitudes within virtual teams.

Provide training and support. Offer tailored training and resources to help team members navigate virtual team dynamics and effectively use communication tools, and seek to address any technological challenges or barriers that may hinder collaboration. It is, nonetheless, importance to support team members in adapting to the virtual-work environment and trained on the protocols of applying relevant communication tools.

Promote a culture of flexibility and adaptability. Flexibility and adaptability do not only have a significant impact on team effectiveness within virtual digital-marketing teams, it is also important to encourage cultural harmony that embraces change, innovation and open-mindedness. Foster an environment where team members are open to new ideas, can quickly adapt to evolving circumstances, and are willing to experiment with different approaches.

Monitor and evaluate team performance. Assessment should be maintained on a regular-basis, so that team performance and collaboration can be sustained and optimized. This

can be achieved through the application of key metrics and indicators of success. It is also of great importance to utilize feedback and data to identify areas for improvement and implement appropriate strategies to enhance team effectiveness.

By adopting and implementing the aforementioned recommendations, digital-marketing freelancers in Riyadh can optimize their cooperation, improve project outcomes and drive success in virtual digital-marketing projects.

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Appendix A: Questionnaire for Collecting Quantitative Data

Part A: Demographic profile

A. Demographic Profile:

- [1] Name (Optional): _____
- [2] Age:
- ☐ 18 – 29
- ☐ 30 – 39
- ☐ 40 – 49
- ☐ 50+
- [3] Sex:
- ☐ Female
- ☐ Male
- [4] Education:
- ☐ UG
- ☐ PG
- ☐ PhD
- ☐ Other (Specify) _____
- [5] Marital Status:
- ☐ Single
- ☐ Married
- ☐ Divorced
- ☐ Does not want to respond

Part B Team Effectiveness of Virtual Digital-Marketing Projects by Freelancers

[1] In this first part, we want you to relate your experience during the teamwork process.

S. No	Please rate the following statements:	SA (5)	A (4)	N (3)	D (2)	SD (1)
1	There was room to comment on the other team members' work tasks					

2	It is acceptable to identify errors in the other team members' tasks					
3	We give feedbacks on each other's work					
4	I Could ask for an explanation if the other team members did not perform the task as planned					
5	A team member would take over someone else's intended task if he/ she did not have time to complete the task himself/ herself?					
6	I am comfortable in taking over the work of others if they needed help					
7	The team members were willing to perform the tasks of other team members when necessary					
8	I am willing to give feedback to other team members					
9	The team members were willing to adjust strategies because someone else on the team needed assistance					
10	The team was comfortable changing direction in a task during the work process if necessary					
11	I was flexible in new situations when they arose					
12	Everyone on the team was aware of the resources the team had at its disposal					
13	The team was willing to deal with unforeseen changes during the teamwork					

14	The team was willing to make changes in the work approach based on changes during the teamwork					
15	The team's goals were more important than individual goals					
16	I enjoy working with each other					
17	Working with other team members improves my own performance					
18	The team members were positive about the teamwork during the work process					
19	The tasks were solved better together by the team members than if it had been solved by one person alone					
20	The team has a common understanding of its goals					
21	The team has a common understanding of the team's environment					
22	The team members have a common goal with the teamwork					
23	I trust the knowledge and abilities of the other team members					
24	I trust the other team members to do what they said					
25	All team members' contributions to the team were appreciated					

26	I am sure that the other team members did their part					
27	I trust that everyone on the team did their best to reach the goal					
28	I will give each other feedback that the messages were perceived					
29	I will give each other feedback if messages were understood					
30	I will give each other feedback if messages were received					
31	The information would reach me					
32	The team members make sure that everyone had received important information					
33	Anyone on the team would take responsibility for making use of the team members' individual skills					
34	The team members would praise me if I had made a good effort					
35	The team members would willingly offer constructive feedbacks on the efforts of the team					
36	There would be a team member who would plan the team's work process willingly					
37	The team members would make sure that others stay on the right track, even though there were changes in the team situation					

38	The team members would coordinate each other's work tasks during the team process					
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Part C: Usage of ICT Tools in Virtual Projects by Freelancers

[3] *Please, tell us how frequently you use the following tools:*

S. No	ICT Tools	<i>Never</i>	<i>Sometimes</i>	<i>Always</i>
1	Databases			
2	E-mails			
3	Programming			
4	Search Engines			
5	Social media (e.g., Twitter, Facebook)			
6	Simulations			
7	Vlogs and Blogs			
8	Audio/ Video Chat (e.g., Skype, Google)			
9	Smart phones and Tablets			
10	Instant messaging/ Text Chat (e.g., Facebook, Hangouts, Messenger, WhatsApp)			
11	Internet browsers			
12	Printers and Scanners			
13	Translators (e.g., Google translator)			
14	Note-taking software (e.g., OneNote, Evernote)			
15	Smartphone Apps			
16	Presentations (e.g., Prezi, PowerPoint)			

17	Excel			
18	Podcasts			
19	Online storage (e.g., Dropbox, Google Drive)			

[1] Others (Specify):

..... ***Thank You!***

المستخلص

لم تغير التكنولوجيا ولا العمل عن بعد وجه صناعة العمل الحر فحسب، بل يبدو أيضا أنها أصبحت القاعدة العامة، ولذلك جاء هذا البحث بغرض استكشاف تأثير أدوات التواصل الافتراضي على تعاون الفريق في مشاريع التسويق الرقمي بين المستقلين في الرياض، وقد تم اقتراح أربعة أسئلة مع فرضيات معينة لكل منها لتقييم الارتباطات بين المتغيرات والاستراتيجيات المختلفة، ثم تم الاستعانة بأحد الاستبيانات المحكمة لدراسة مشابهة، وذلك لجمع البيانات من 54 من العاملين المستقلين في مجال التسويق الرقمي في الرياض، وحددت الثقة وكفاءات القادة وأدوات الاتصال كمتغيرات مستقلة، في حين تم تحديد تعاون الفريق وفعاليته كمتغيرات تابعة، وبعد الانتهاء من معالجة بيانات المشاركين عبر برنامج SPSS ، أظهرت النتائج وجود علاقة مهمة بين استعداد أعضاء الفريق لتقديم الملاحظات والدعم وفعالية فرق التسويق الرقمي الافتراضية، وعلاوة على ذلك، ساهم وجود الفهم المشترك للأهداف والعمل الجماعي في نجاح المشاريع بشكل كبير، كما تبين أن مستوى الثقة بين أعضاء الفريق له علاقة معنوية بالأداء والتعاون، وعلى الرغم من الأدوار الرئيسية التي تلعبها المرونة والقدرة على التكيف وأهميتهما، لم يتم العثور على علاقة معنوية لتعزيز تعاون الفريق وفعاليته بشكل كبير، وتوصلت نتائج هذا البحث إلى عدد من التوصيات الواعدة والمفيدة التي من شأنها أن تسهم في إنجاح مشاريع التسويق الرقمي لدى المستقلين، كما أنها تشير إلى وجود بعض القيود البحثية المتعلقة بالعوامل والمتغيرات والاستراتيجيات الأخرى غير المبحوثة، والتي قد تلعب دورًا أكثر أهمية في تعزيز تعاون فرق التسويق الرقمي الافتراضية لدى المستقلين، وبالضرورة تعزز فعاليتها، حيث يمكن أن تركز الأبحاث المستقبلية على استكشاف متغيرات إضافية قد تسهم في نجاح الفريق، مثل أنماط الاتصال، أو أساليب القيادة، أو البنية التحتية التقنية، ومن خلال فهم هذه الديناميكيات وتعقيدها، يمكن للعاملين المستقلين في التسويق الرقمي تحسين تعاون الفريق وتحقيق أقصى قدر من النتائج.



جامعة ميدأوشن

كلية الإدارة

تخصص إدارة المشاريع

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العام الدراسي

2024