THE EFFECT OF CHARACTER STRENGTHS ON JOB PERFORMANCE IN VIRTUAL TEAMS

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Abstract

The onset of the Covid-19 pandemic and the Fourth Industrial Revolution (4IR) has brought about an unprecedented age of new technology, and with it, a substantial rise in the number of virtual teams. The need to understand the antecedents to job performance within this virtual medium is now prevalent. Therefore, the effects of personality traits, seen through the lens of positive psychology, on job performance within virtual teams holds substantial value. This thesis studies the effects and influence of character strengths on job performance within the context of virtual teams.

The analysis of the literature generally found the presence of modest relationships between character strengths and job performance, however, there was a clear lack of empirical backing within virtual teams. To add empirical foundation, a conceptual model was outlined based on the previous work of Harzer and Ruch (2014) and a quantitative methodology was followed, whereby employees in virtual teams measured their character strengths and job performance through a self-report survey. Correlation and regression analysis were performed and it was found that the majority of hypothesized character strengths were significantly related to their respective job performance dimensions in virtual teams. The regression analysis found that a combination of seven character strengths: honesty, perseverance, kindness, leadership, social intelligence, zest, and appreciation of beauty and excellence, can significantly predict between 33% and 49% of the variance in various job performance dimensions. The implications of this research relate to the fields of character strengths, job performance and virtual teams. The limitations of the study, such as the sample size, psychometric properties of the measuring instruments and the nature of virtual teams were discussed. Recommendations for future research such as increasing the sample size and the revision of the VIA-72 have been outlined.

Opsomming

Die aanvang van die Covid-19-pandemie en die Vierde Industriële Revolusie (4IR) het 'n ongekende era van nuwe tegnologie meegebring en daarmee saam 'n aansienlike toename in die aantal virtuele spanne. Die behoefte om faktore wat werkprestasie binne hierdie virtuele medium vooruitgaan te verstaan, is nou algemeen. Die effek van die uitwerking van persoonlikheidseienskappe, gesien deur die lens van positiewe sielkunde, op werkprestasie binne virtuele spanne is daarom van wesenlike waarde. Hierdie tesis bestudeer die uitwerking en invloed van karakterkragte op werksverrigting binne die konteks van virtuele spanne.

Die ontleding van die literatuur het oor die algemeen die teenwoordigheid van verskeie verhoudings tussen karakterkragte en werksprestasie gevind, maar daar was 'n duidelike gebrek aan empiriese ondersteuning binne virtuele spanne. Om empiriese grondslag te verbreed , is 'n konseptuele model, gebaseer op die vorige werk van Harzer en Ruch (2014), uiteengesit. 'n Kwantitatiewe metodologie is gevolg, waarvolgens werknemers in virtuele spanne hul karakterkragte en werksprestasie deur middel van 'n selfverslagopname gemeet het. Korrelasie- en regressie-analises is uitgevoer, en daar is gevind dat die meerderheid van veronderstelde karakterkragte beduidend verband hou met hul onderskeie werkprestasiedimensies in virtuele spanne. Die regressie-analise het bevind dat ’n kombinasie van sewe karakterkragte: eerlikheid, deursettingsvermoë, vriendelikheid, leierskap, sosiale intelligensie, lus en waardering vir skoonheid en uitnemendheid, tussen 33% en 49% van die variasie in verskeie werkprestasiedimensies beduidend kan voorspel. Die implikasies van hierdie navorsing hou verband met die velde van karakterkragte, werkprestasie en virtuele spanne. Die beperkings van die studie en aanbevelings vir toekomstige navorsing is uiteengesit.

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Table of Contents

List of Tables

List of Figures

1 Introduction, Research Question and Objectives

1.1 Introduction

Professor Klaus Schwab (as cited in Hyun Park et al., 2017, p. 934), at the 2016 World Economic Forum, introduced the theme of the Fourth Industrial Revolution (4IR) by stating, “We stand on the brink of a technological revolution that will fundamentally alter the way we live, work and relate to one another.” The 4IR has since been characterised by rapid (Rasca et al., 2018) and fundamental transformations within a relatively short time-frame (Bloem et al., 2014). This is not uncommon of industrial revolutions, as the preceding three industrial revolutions have demonstrated a relatively equal rate of change (Sosik & Zhu, 2020).

1.2 The Fourth Industrial Revolution

The First Industrial Revolution began in the 1760s and introduced the world to steam power and mechanical power (Hyun Park et al., 2017). The Second Revolution was launched in the 1870s, after the invention of electricity in the United States, which led to electric power and mass-production processes. The Third Industrial Revolution welcomed automation, computing power and digitalisation of technology in the 1950s. (Hyun Park et al., 2017; Sosik & Zhu, 2020). Since 2010, the fourth and current industrial revolution has introduced the world to cyber-physical systems, such as artificial intelligence (AI), robotics, drones, machine learning and big data, which are all powered by the internet (Sosik & Zhu, 2020). Even though the 4IR is still considered to be in its relative infancy, the current trends indicate contrasting positive and negative effects expected in society as a whole, and this is specifically true in jobs, the workplace, and employee competencies and skills (Nankervis et al., 2019).

The working environment will undoubtedly change even more in the coming years due to a number of reasons, but arguably the biggest change will come about through technological developments (Nankervis et al., 2019; Sorko et al., 2016). Taylor et al. (2019), predict that in the near future, up to 10% of occupations will be fully automated and thereby totally eliminated. An even more interesting prediction, however, is that in about 60% of jobs, one-third of component activities within those jobs will be automated (Taylor et al., 2019). This highlights the need for companies to prepare and adapt their strategies, general work practices, goals and systems to align with the 4IR so as to avoid a potential skills or talent crisis.

It is forecasted that in an ever-changing work environment (Nankervis et al., 2019), a geographical redistribution of the workforce, and therefore a redesign of job profiles, will take place (Sorko et al., 2016). This is particularly evident as, according to the Deloitte Insights

(2019) report on Global Human Capital Trends, there is a shift from traditional career employees to an alternative workforce consisting of largely freelance, contract and gig employees. Gig employees are commonly known as independent contractors, who are then only employed for a finite period of time as opposed to having a permanent contract (Cunningham-Parmeter, 2019). These workers either assist in filling occupational gaps or deficiencies and, increasingly, take on work full-time from a remote location (Deloitte Insights, 2019). The 4IR has transformed relationships and communication in the workplace, which has allowed workers to operate from remote locations and different parts of the world by working online or in virtual teams (Aguinis & Lawal, 2012).

1.3 Virtual Teams

A virtual team is defined by Hertel et al. (2005, p. 71) as,

> "… teams that consist of two or more persons who collaborate interactively to achieve common goals, while at least one of the team members works at a different location, organization or at a different time so that communication and coordination is predominantly based on electronic communication media (e-mail, fax, phone, video conference, etc.)."

It is evident that virtual teams are rising in prevalence due to increased globalisation, increased digitisation of business processes and general advancements in technology (Krumm et al., 2016). Prior to the Covid-19 pandemic, Minton-Eversole (2012) found that just above half of virtual team respondents studied, indicated the reason for virtual teams was to include expertise from different locations. Furthermore, over 70% of virtual teams are used for brainstorming and fixing problems. However, during the pandemic, the reason for many virtual teams forming was out of necessity due to the worldwide lockdown. In Africa, the International Labour Office (2022) found that 36% of the 750 000 employees surveyed worked virtually during the pandemic. This number was much higher in the South African context where it is reported that almost 80% of formal workers operated remotely due to the strict lockdown regulations (*Dramatic Increase in Remote Working in South Africa*, n.d.). Naturally, post-pandemic, many employees continued working remotely due to the improved virtual infrastructure and the advantages that this new way of working brought about. However, as much as there are numerous advantages, virtual working also presents certain disadvantages.

According to Beer et al. (1984), as well as Bergiel et al. (2008), the advantages and challenges of virtual teams can be segmented into three levels, namely the individual, organisational and societal levels. The individual level pertains to all the advantages or disadvantages incurred on the employee themselves as a result of working in a

geographically-dispersed team and through a virtual medium. The organisational level juxtaposes the advantages and challenges that have an effect on the productivity, client relationships and costs incurred on the business. Finally, the societal level comprises the positive and negative contributions (low unemployment rates and lowered interpersonal engagement respectively) that working in virtual teams can have on society as a whole, outside the effect already incurred on the organisation. The advantages and disadvantages will be further analysed in chapter 2.

According to the World Economic Forum (2016), current trends indicate that human resource (HR) managers need to be empowered to create a flexible work environment and thereby allow employees to work remotely. The Covid-19 pandemic and the ensuing worldwide lockdown accelerated the change from the physical workplace to a more virtual space (International Labour Office, 2022). The acceptance of technology, the Covid-19 pandemic, and the gradual movement towards virtual teams as discussed in the literature above, has therefore fuelled the academic discussion on performance within virtual teams.

1.4 Job Performance

Performance within teams can be interpreted in two contexts. Firstly, the performance of the team as a unit, which is often referred to as team outcomes, and secondly, the individual performances of members within the team. For the purpose of this study, performance will be narrowed down to individual performance, referred to as job performance.

According to Borman and Motowidlo (1997, p. 72), job performance can be defined as the “degree to which an individual helps the organization reach its goals.” They go on to further define job performance as “the aggregated contribution value of an individual's behavioural episodes over a standard interval of time which represents the net worth of that individual's behaviour to the organization during that time interval.” Job performance is described as behavioural, episodic, evaluative, and multi-dimensional. Multiple studies (Borman & Motowidlo, 1997; Harzer & Ruch, 2014; Rego et al., 2010), split job performance into two sub-dimensions, namely *task performance* (TP) and contextual performance. Both task performance and contextual performance account for relatively equal amounts of variance in overall performance ratings (Borman et al., 1995).

1.4.1 Task and Contextual Performance

Task performance is essentially the act of transforming an organisation’s raw materials or inputs into the finished product or service that is sold to customers (Borman & Motowidlo, 1997). The distinction between task performance and contextual performance is that contextual performance does not have a direct effect on the organisation’s technical

processes. Contextual performance is therefore “a set of interpersonal and volitional behaviours that support the social and motivational context in which organizational work is accomplished” (Borman and Motowidlo, 1993, as cited in Motowidlo & Van Scotter, 1994, p. 525). Contextual performance can be divided into three sub-dimensions, namely *job dedication* (JD; Van Scotter & Motowidlo, 1996), *organisational support* (OS ; Borman et al., 2001) and *interpersonal facilitation* (IF; Van Scotter & Motowidlo, 1996).

1.5 Character Strengths

With the emergence of the 4IR, the question arises whether job performance can be predicted or influenced in this emerging environment, one that may be particularly relevant in the future? A reminder of the definition of job performance as stated in the above literature is “the aggregated contribution value of an individual's *behavioural* episodes…”. Character strengths are described as positive personality traits (Harzer & Bezuglova, 2019; Harzer & Ruch, 2014; Park et al., 2004). Personality traits are demonstrated in behaviour and consequently can influence behaviour (Harzer & Ruch, 2014). The researcher is, therefore, interested in specifically what aspects of positive personality influence behaviour, and thus performance, within a potentially crucial and prevalent future environment, i.e. virtual teams.

There is a multitude of models used to measure personality traits, such as the big five personality traits, Cattell's 16 personality factors, and the HEXACO personality inventory. The most common model, used in studies in which personality is used to predict job performance, is the big five personality traits (Barrick & Mount, 1991; Barron et al., 2016; Judge & Zapata, 2015; Thoresen et al., 2004). The big five model measures personality traits within five categories, namely: openness to experience, conscientiousness, extraversion, agreeableness and neuroticism (McCrae & Costa, 1987) and this model wouldn’t necessarily be described as positive, but rather neutral (Harzer & Bezuglova, 2019). Ideally, a more segmented, specific and positive measure of personality, in line with the positive psychology movement, would be employed (Harzer & Ruch, 2013).

A positively orientated model identified is the Values in Action (VIA) classification of character strengths and virtues conceptualised by Peterson and Seligman (2004), one of the building blocks of positive psychology (Littman-Ovadia et al., 2021). The VIA classification consists of six core virtues, namely: wisdom and knowledge; courage; humanity; justice; temperance; and transcendence. Each core virtue comprises between 3-5 sub-dimensions, known as character strengths, that make up a total of 24 character strengths, as indicated by Table 1. Certain character strengths described correlate highly with the big five personality traits, but also, depending on which strength, often reflect a deeper and a more segmented representation of the construct being measured (Park et al., 2004).

Peterson and Seligman (2004) conceptualised the concept of character strengths and virtues by identifying core values and virtues across most cultures and throughout history. Cultural values that were only relevant or important within one or very few particular cultures were excluded.

Harzer and Ruch (2014) measured the effects that an employee's character strengths had on task performance, job dedication, interpersonal facilitation and organisational support within a variety of industries, occupations and work environments. However, all environments consisted of employees working in person. They found that task performance was consistently associated with perseverance, honesty, teamwork, prudence, and self-regulation. Strengths that were highly correlated to job dedication included bravery, perseverance, curiosity, self-regulation and love of learning. Interpersonal facilitation was unsurprisingly most highly associated with teamwork, leadership, fairness and kindness, which fall under the civic and interpersonal character strengths. Finally, organisational support was related to all but six character strengths, with the highest correlations being with perseverance, kindness, team-work, and self-regulation.

This study will largely focus on the above 11 highest correlating character strengths and thus aim to determine whether the results of Harzer and Ruch (2014) are replicable in the virtual team context. Notable relationships, outside of that found by Harzer and Ruch (2014), will also be analysed and discussed.

1.6 Research Problem, Question and Objectives

1.6.1 Problem Statement

The Covid-19 pandemic and the 4IR have catalysed the onset of a new working environment and the researcher is interested in exploring a field that appears to be the basis of the future world of work. The human element will likely always be a pertinent aspect of work and the ability to understand the behaviour of employees will be valuable today and in the future.

1.6.2 Research Question

The research question is therefore posed as: Which character strengths are the most strongly associated with the dimensions of self-rated, individual job performance in virtual teams?

1.6.3 Research Objectives

This question is further explored in the research objectives.

Objective 1: To examine, and compare, the relationship of each of the 11 identified highest correlating character strengths, found by Harzer and Ruch (2014), with their respective sub-dimension of individual job performance, namely: task performance; job dedication; organisational support; and interpersonal facilitation, all within virtual teams.

Objective 2: To examine, on an exploratory level, the relationship between all 24 character strengths and self-rated individual job performance within virtual teams.

1.7 Conclusion

The emergence of the 4IR has created relatively unexplored work environments, such as virtual teams, which has in turn highlighted the need for the understanding of employee behaviour within this new context. Employee behaviour is largely explained by the construct of job performance, and therefore the ability to understand the positive personality traits that predict and influence this construct will contribute to the understanding of the environment as a whole. This study will therefore attempt to provide further empirical evidence on the relationship between character strengths and individual job performance, within virtual teams.

2 Literature Review

2.1 Introduction

The literature review will initially provide an expanded definition and discussion of virtual teams. Following this, a brief overview of the background to the formation of character strengths as well as their relevance in the work environment will be provided. Each relevant character strength will then be defined and discussed to provide the reader with a comprehensive understanding of each construct. The four dimensions of job performance will also be defined, discussed and then analysed in terms of their relationship with their highest correlating character strengths according to Harzer and Ruch (2014). The relationship between these variables will be discussed within the context of teams and virtual teams where the presence of supporting literature allows.

2.2 Virtual Teams

The 4IR will bring about unprecedented and fundamental changes in the work environment (Nankervis et al., 2019), with the boundaries between the physical and digital worlds becoming indefinite and blurred (Schwab, 2018). The changes have been typified as rapid and influential (Rasca et al., 2018) and the onset of the Covid-19 pandemic has only accelerated the transformation, with millions of employees working remotely worldwide (Kilcullen et al., 2021). It has further been recommended by the World Economic Forum (2016) that organisations, as well as HR managers, allow their employees to work remotely, thus encouraging a flexible working environment. Therefore, it is evident that virtual teams are rapidly increasing in presence and importance in the global business environment.

According to Gibson and Cohen (2003), there are 3 distinct characteristics that must be present to define a group of individuals as a virtual team. Firstly, the individuals must belong to a functioning team with members being interdependent; sharing responsibility; and being perceived as a social unit by outsiders. Secondly, the team members must be geographically dispersed and therefore work from different locations. Finally, the word virtual requires team members to interact and complete tasks through a technological, communication medium as opposed to face-to-face interaction. This definition therefore differentiates teams from other internet-based groupings, such as web-based learning groups and communities.

Another definition proposed by Lipnack and Stamps (1997), is that a virtual team can be defined by three facets: people, purpose and link. Therefore, a virtual team can be defined as a group of *people* with varying knowledge, skills and abilities (KSA), whose common *purpose*

is to achieve some goal while communicating and collaborating through a *link,* such as a virtual communication medium.

Virtual teams have numerous advantages and disadvantages and according to Beer et al. (1984) as well as Bergiel et al. (2008), the advantages and challenges of virtual teams can be segmented into 3 levels, namely the individual, organisational and societal levels.

On the individual level, advantages can include higher flexibility, better time management, more responsibility, increased job motivation, improved employee empowerment, and additional autonomy. Contrastingly, challenges can manifest themselves as feelings of isolation due to decreased in-person interaction. There is also an increased chance of misunderstanding which can lead to interpersonal conflict as well as higher levels of role ambiguity (Beer et al., 1984; Bergiel et al., 2008).

At the organisational level, the advantages outweigh the disadvantages. The disadvantages are limited to the supervision of team members and therefore the prevention of unproductive time, however, this can be counteracted by task-driven management. Challenges also consist of the increased cost of additional training programs and data security. The strategic advantages are, firstly, teams can be designed and staffed around the expertise of available team members as opposed to only their local and geographical availability. Secondly, virtual teams can work “around the clock” if the team is staffed with employees living in different time zones. Thirdly, a closer connection can be formed and maintained with clients, suppliers, and customers in different areas due to the geographical dispersion of the workforce. Fourth and lastly, expenses for travelling to and from work as well as office space expenses are greatly reduced (Beer et al., 1984; Bergiel et al., 2008).

At the societal level, virtual teams can contribute to developing regions that have a low employment rate, as well as providing more employment opportunities for handicapped people and employees with family-care duties. Finally, virtual teams at the societal level present a similar challenge to the above organisational level, which is the lack of interpersonal interaction due to the technological nature of the work environment (Beer et al., 1984; Bergiel et al., 2008).

Therefore, it is evident that virtual teams can be advantageous for organisations but can also fail if not managed or set up correctly (Gibson & Cohen, 2003). Virtual teams have the unique ability of being able to access skills, knowledge, and abilities from around the globe with no limit due to geographical placement (Krumm et al., 2016). It is therefore important that the correct individuals populate virtual teams, as Blackburn et al. (2003) posit that creating a successful virtual team is critically orientated around choosing individuals with the correct KSA that can work together effectively, and collaboratively achieve tasks.

The researcher of this study is therefore interested in what dimensions of personality or strengths are needed to create a successful virtual team. These characteristics will be analysed through the lens of positive psychology to promote the success of virtual teams.

2.3 Positive Psychology

Peterson and Seligman (2004) postulated the concept of character strengths and virtues in support of the positive psychology movement. The positive psychology movement was a reaction to the previously held focus on the treatment and understanding of psychopathological illness, commonly known as the disease model. The disease model focused on the negative outcomes of psychological illnesses and the reactive interventions and treatment required to manage the symptoms (Seligman & Csikszentmihalyi, 2000). However, there was little-to-no emphasis on the prevention of the onset of mental illness, and consequently, well-being and mental health were merely considered an absence of psychopathological disorders (Peterson & Seligman, 2004).

Contrastingly, the positive psychology movement represented a proactive approach to well-being by instead focusing on the optimal functioning of individuals (Seligman, 2002). The movement focused on the study of subjective experience, fulfilment, and positive individual characteristics to promote well-being, as opposed to restoring it, and thus either preventing or reducing the effect of mental illness on the individual (Seligman, 2002).

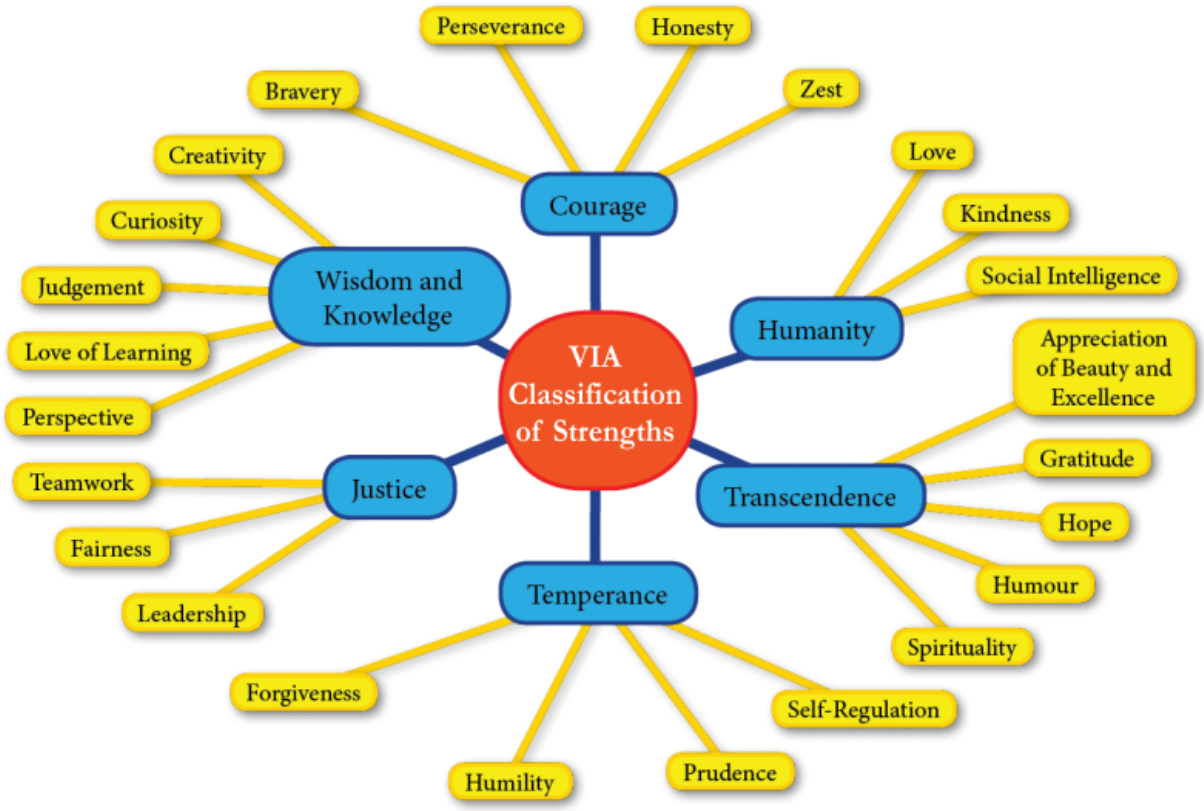
2.3.1 Character Strengths

The positive psychology model therefore elevated the focus on the promotion of strengths and this inspired the formation of character strengths and virtues by Peterson and Seligman (2004). It is important to distinguish between strengths and virtues as the concepts are similar, yet not identical. Virtues, of which there are six, are defined as “the core characteristics valued by moral philosophers and religious thinkers” (Peterson & Seligman, 2004, p. 13). They represent the overall classification of the groupings of character strengths and are deemed universal and thus their presence in humanity is necessary for the survival of the human race. Character strengths, of which there are 24, are the processes or mechanisms that make up these universal virtues and thus, as a collective, provide an avenue for one to display the relevant virtue (Peterson & Seligman, 2004). Furthermore, character strengths are distinguishable from talents or abilities by a set of criteria laid out by Peterson and Seligman (2004, pp. 17–28), which include conditions such as “does not diminish others”, “ubiquity across cultures”, “trait-like” and “morally valued”. Therefore, it is evident that character strengths represent a set of distinct, positively orientated, and relevant psychological constructs. Figure 1 illustrates the structure of the character strength model as postulated by

Peterson and Seligman (2004). Table 1 contains a brief description of each core virtue and its corresponding character strength.

Figure 1

Values in Action (VIA) Classification of Strengths



Note. The VIA Character strengths and virtues (Peterson & Seligman, 2000); revised 2019 (Niemiec, 2019)

Table 1

The Values in Action Classification of Strengths

Virtue and Character Strength	Description of Character Strength
Wisdom and Knowledge	Cognitive strengths that entail the acquisition and use of knowledge
Creativity	Thinking of novel and productive ways to do things
Curiosity	Taking an interest in all of ongoing experience
Judgement	Thinking things through and examining them from all sides
Love of Learning	Mastering new skills, topics, and bodies of knowledge
Perspective	Being able to provide wise counsel to others

Table 1 Continued

Virtue and Character Strength	Description of Character Strength
Courage	Emotional strengths that involve the exercise of will to accomplish goals in the face of opposition, external or internal
Honesty	Speaking the truth and presenting oneself in a genuine way
Bravery	Not shrinking from threat, challenge, difficulty or pain
Perseverance	Finishing what one starts
Zest	Approaching life with excitement and energy
Humanity	Interpersonal strengths that involve "tending and befriending" others
Kindness	Doing favours and good deeds for others
Love	Valuing close relations with others
Social Intelligence	Being aware of the motives and feelings of self and others
Justice	Civic strengths that underlie healthy community life
Fairness	Treating all people the same according to notions of fairness and justice
Teamwork	Organizing group activities and seeing that they happen
Leadership	Working well as a member of a group or team
Temperance	Strengths that protect against excess
Forgiveness	Forgiving those who have done wrong
Humility	Letting one's accomplishments speak for themselves
Prudence	Being careful about one's choices; not saying or doing things that might later be regretted
Self-regulation	Regulating what one feels and does
Transcendence	Strengths that forge connections to the larger universe and provide meaning
Appreciation of beauty and excellence	Noticing and appreciating beauty, excellence, and/or skilled performance in all domains of life
Gratitude	Being aware of and thankful for the good things that happen
Hope	Expecting the best and working to achieve it
Humour	Liking to laugh and joke; bringing smiles to other people
Spirituality	Having coherent beliefs about the higher purpose and meaning of life

Note. Adapted from “Character Strengths and Virtues: A Handbook and Classification “ by C. Peterson and M.E.P. Seligman, pp 29–30 and the VIA Institute on Character © Copyright 2004–2021, VIA Institute on Character. All Rights Reserved. Used with Permission. www.viacharacter.org

2.3.2 Character Strengths in the Workplace

Peterson and Seligman (2004) viewed character strengths as the foundation of the human condition and emphasized the importance of congruence between tasks and an individual’s character strengths. According to the two researchers, this congruence is vital to the achievement and sustainability of psychological well-being. Character strengths are correlated with behavioural and psychological outcomes which include happiness and fulfilment, goal achievement, energy and engagement (Linley et al., 2009). Research also indicates that people who embrace and use their character strengths in everyday life experience lower perceived stress levels (Wood et al., 2011). Furthermore, the same longitudinal study indicated that there was a direct, positive relationship between the use of strengths and well-being over time, i.e., the more people use their strengths, the higher their levels of well-being. Another study by Linley et al. (2010), found that the individuals that utilised their strengths were significantly more likely to achieve their goals and, therefore, the aforementioned findings have particular relevance to the work environment and thus further application to virtual teams.

In relation to the work environment, character strengths are typically related to: one’s performance and productivity (Hodges & Asplund, 2010); satisfaction with one’s job (Harzer & Ruch, 2015); performance of team roles (Ruch et al., 2018) and have been found to contribute to lower employee turnover (Biswas-Diener et al., 2011). Harzer et al. (2021) also found that character strengths in the workplace are relevant predictors of job performance over and above the influence of cognitive abilities and broad personality traits, such as the big five personality traits. Schreuder and Coetzee (2016) maintain that, once again, congruence between individuals and their strengths influences the subjective experience of meaning and engagement in the workplace. They go on to say that when individuals can apply their character strengths at work, well-being is likely to be high. However, Buckingham and Clifton (2001) found that only 20 percent of employees around the world, who worked in large companies, believed that their strengths were being used every day. Harzer and Ruch (2012) believe that this is due to the fact the application of one’s character strength is dependent on whether the work environment encourages the application of these strengths.

2.3.2.1 Interventions. One of the reasons for the formation of character strengths was to provide the positive psychology movement with a collective vocabulary, but also a direction for research and interventions (Dubreuil et al., 2014; Peterson & Seligman, 2004). A number of studies have therefore measured the effects of implementing interventions orientated around the use of strengths. Dubreuil et al. (2014) implemented a strength-based intervention in the workplace by making employees aware of their strengths, providing employees with a better understanding of their strengths, and then guiding employees on how to apply their strengths at work. The results showed that employees who demonstrated the largest increase in strengths use also showed significant increases in work performance. Furthermore, three studies have supported findings related to the use of strength for interventions. Firstly, Cable et al. (2015), found that strength-based interventions improved job performance under pressure and facilitated creative problem-solving. Secondly, Cable et al. (2013) found the positive effect of a strength-based intervention to be improved job performance and higher customer satisfaction. Finally, it was found that a strengths-based approach can lead to better team performance in terms of creativity (Lee et al., 2016).

2.3.2.2 Virtual Teams. In the context of virtual teams and the relationship with character strengths, there seems to be limited research. Looking at non-virtual teams, Ruch et al. (2018), found that the competent performance of team roles was robustly related to character strengths. Specifically, zest, leadership, hope and teamwork appeared to play a vital part in the performance of the majority of team roles. Looking at virtual teams, Sosik and Zhu (2020), outline the potential importance of certain character strengths in the context of the 4IR. They hypothesize that with the onset of the 4IR the need for geographically dispersed teams, and even entirely virtual organisations, will be prevalent. The onset of the Coronavirus pandemic has pushed companies even further in that direction. With 35% of American employees indicating they won't resume working for their current company if a remote option is not available (LaFleur, 2020), organisations that have been operating efficiently over the lockdown period may see no reason to occupy physical office space again. However, the nature of virtual teams is one of social isolation, therefore dehumanization and loneliness can result (Avolio et al., 2014; Mak & Kozlowski, 2019). Sosik and Zhu (2020) thus focused on the human element and the promotion of character strengths in virtual team leaders.

This research, however, is based on Harzer and Ruch (2014), who performed a study analyzing the effect of the presence of character strengths on the four dimensions of job performance. The study provided valuable insight into the effect of character strengths on job performance, but the scope was limited to individuals in a face-to-face organisation, not teams or virtual teams. The study found that, of the 24 character strengths, there was a total of 11 character strengths that correlated highly with one or two of the four dimensions of job

performance, namely: task performance, organisational support, interpersonal facilitation and job dedication (Borman et al., 2001; Van Scotter & Motowidlo, 1996). However, to fully understand the significance of the study performed by Harzer and Ruch (2014), the 11 character strengths and four dimensions of job performance must be further analysed and discussed to gain a comprehensive understanding of the constructs.

2.4 Character Strengths

The 11 character strengths to be discussed are perseverance, honesty, teamwork, prudence, self-regulation, bravery, curiosity, love of learning, leadership, fairness and kindness, all of which correlated highly with a certain aspect, or two, of job performance.

2.4.1 Perseverance

Perseverance as a character strength, under the virtue of courage, is defined as a "voluntary continuation of a goal-directed action despite obstacles, difficulties or discouragement" (Peterson & Seligman, 2004, p. 229). Perseverance is defined by van Gelderen (2012, p. 1) as, "continued goal striving in spite of adversity, as a core competency for the enterprising individual." Peterson and Seligman (2004) also notably differentiate between attitude perseverance and perseverance of actions. Continually holding a belief in a particular notion or the intention to overcome obstacles (attitude perseverance) does not always translate to action (perseverance of actions), and therefore is a difficult construct to measure. The conceptual definition for the purpose of this study will therefore be focused on attitude perseverance as the perseverance of virtual team employees will be measured with a Likert-type scale.

Perseverance is rooted in an expectation that the outcome of persistence will result in reward (Peterson & Seligman, 2004). The other outcome of perseverance (or a lack thereof) is typically failure, which is a concept that people don't strive to experience. Failure is an undesirable state and therefore perseverance requires an overcoming of the human tendency to quit and thus fail. Peterson and Seligman (2004) maintain that the tendency to quit is rooted in two sources, firstly, the effect on self-esteem and secondly, one's level of self-regulation.

The failure of a task can result in a negative effect on self-esteem, which humans naturally attempt to avoid. However, Peterson and Seligman (2004) state that this can be mitigated by an initially high level of self-esteem (to cushion the effect of failure) or the anticipation of future task achievement (to then rebuild the self-esteem). In terms of self-regulation, Peterson and Seligman (2004) postulate that the overcoming of the tendency to quit is eased by higher levels of self-control. Self-control provides individuals with the ability to depress the urge to quit in the face of adversity.

It is therefore evident that perseverance is made up of two main notions. Firstly, perseverance is a behaviour that is unique to the individual and one that the individual must decide to perform. Secondly, perseverance is the overcoming of adversity or obstacles. As virtual teams are likely to possess significant challenges or obstacles (Beer et al., 1984; Bergiel et al., 2008), it is beneficial to determine whether higher levels of perseverance in individuals promote better task and contextual performance.

2.4.2 Honesty

Honesty is also a character strength under the virtue of courage and is defined as interpersonal and intrapersonal sincerity which provides an accurate representation of one's self to others (Peterson & Seligman, 2004). Honesty is considered a social norm (Grosch & Rau, 2017), and therefore the contravention of this norm can result in a negative psychological cost to the individual (Peterson & Seligman, 2004). The costs include feelings of guilt (Battigalli & Dufwenberg, 2007) as well as a negative modification in one's self-perception (Bénabou & Tirole, 2011); both of which are undesirable end states. The undesirable end state of guilt can affect human behaviour in an attempt to avoid this unpleasant state in the future (Battigalli & Dufwenberg, 2007). However, the change in one's self-perception is a more difficult consequence to measure.

Peterson and Seligman (2004) pose the question as to whether psychological authenticity is based on the congruence between the perceived image of one's self and the actions that are actually performed? Carl Rogers (1961) argues that the best chance an individual has of accurately reflecting their own self-perception, is through the exploration of one's internal experience and the acceptance of the outcome of this search. The reason for this is that if the individual can engage with this exploration within themselves, they can then develop and mould their internal experience to reflect their own self-perception, thus achieving the desired end state of congruence (Peterson & Seligman, 2004). Therefore, individuals who attempt to preserve their self-image through a refusal to explore the internal experience reflect a lack, or possibly an intentional sacrifice, of authenticity or honesty.

Peterson and Seligman (2004, p. 205) further define honesty and authenticity as "taking responsibility for how one feels and what one does". The concept therefore includes, not just the real demonstration of oneself but the presence of a morally coherent and congruent individual.

2.4.3 Teamwork

Included as a character strength under the virtue of justice is *teamwork*, which is defined as coherently working or operating as a member of a team, group or organisational department (Peterson & Seligman, 2004). The character strength was termed citizenship

originally, but teamwork was noted to be the most behavioural of the synonyms next to loyalty and social responsibility (Harzer & Ruch, 2014). Due to this behavioural aspect and the focus of this study on job performance, which is behavioural in nature, teamwork will be referred to as the label for citizenship, loyalty and social responsibility. Building on these synonyms, teamwork also entails loyalty to the group or team within which one is working, as well as pulling one's weight in the same context (Peterson & Seligman, 2004). The individual with teamwork as a character strength accepts responsibility with regard to their team role. This is typically as a result of a prevalent sense of duty within the individual (Peterson & Seligman, 2004).

Peterson and Seligman (2004) also include another aspect that helps define the construct of teamwork, which is that the focus extends past the individual's self to include that of their teammates. There is a recognition that in certain situations there is a requirement to value the public interest over the achievement of one's personal goals. This can even extend to be a moral value around which people live. Furthermore, individuals possessing this character strength are likely to be active within their community from a civic and social responsibility aspect (Peterson & Seligman, 2004). This character strength is therefore collaborative and cooperative orientated, and thus the reason for its inclusion in the prediction of virtual team performance.

Another term commonly used to describe this character strength is teamwork orientation. Teamwork orientation is described by Salas et al. (2005) as the propensity of an individual to consider other team members during a group interaction while simultaneously valuing the goals of the team over the goals of the individual. Teamwork orientation is a reflection of the willingness of an individual team member to work and cooperate with others (Watson et al., 1998). Another aspect included in the definition is a commitment to the fostering of interpersonal relationships (Watson et al., 1998) and therefore the relationship between teamwork and interpersonal facilitation will be valuable to explore in a virtual team context.

2.4.4 Prudence

Prudence is a character strength of the virtue of temperance and is defined as taking care regarding one's choices or decisions (Peterson & Seligman, 2004). Prudence, or the act of "being a prude", has negative connotations imposed by society, where the popular narrative is one of living life to the fullest and embracing a "no risk, no reward" approach to life. The word prude is often associated with the personality characteristics of faint-heartedness, tension or anxiety, and a generally boring disposition toward life (Peterson & Seligman, 2004). The authors, however, still include it as a character strength as the true definition, unhindered by society-imposed connotations, is orientated around caution. In addition, Hogan and Hogan

(1995) and Hough (1992, 1997), as cited in Hogan and Shelton (1998, p. 137), further define prudence as “the degree to which a person seems conscientious, conforming, and dependable”. Individuals who demonstrate a high level of prudence are therefore considered organised, discipline orientated and hold respect for authority.

Prudence is also the focus and concern for one’s future and therefore the organisation and management of one’s life to achieve long-term goals (Peterson & Seligman, 2004). This is achieved through preempting the consequences of actions, or a lack of actions, and thus reasoning and preparing for managing, achieving or preventing the outcomes. Evidently, the critical aspect of prudence is the orientation towards the future (Peterson & Seligman, 2004). Prudent individuals are acutely aware that the sacrifice of pleasure, or one’s desires in the short-term, may lead to favourable long-term outcomes through the achievement of personal or career-related goals (Peterson & Seligman, 2004). Each decision, however, is made with the utmost consideration and planning to mitigate the risk of an unfavourable outcome.

Peterson and Seligman (2004) even go as far as to align the character strength of prudence with critical thinking and open-mindedness. Critical thinking is defined by Ennis (1993, p. 180) as “reasonable reflective thinking focused on deciding what to believe or do”. Thus, there seems to be a conceptual overlap between critical thinking and prudence in terms of reasoning and decision-making, which are prominent aspects of both constructs. Therefore, it will be interesting to explore the relevance of this character strength and its effect on job performance in virtual teams.

2.4.5 Self-Regulation

Self-regulation is also a character strength belonging to the virtue of temperance. Self-regulation is known as the ability of an individual to regulate or control their actions (Peterson & Seligman, 2004). This includes actions such as achieving one’s goals and living up to personal, societal or work-related standards (for example, key performance indicators) (Peterson & Seligman, 2004). Self-regulation is also strategy-based but researchers have focused their studies on metacognitive and cognitive processes (Butler, 1998; Weinstein et al., 1987). Thus, self-regulation refers to regulating one’s thinking, emotions, desires and behaviours (Peterson & Seligman, 2004). Self-regulation is further defined by Peterson and Seligman (2004) as the ability to manage or control excess. The presence of this strength entails the regulation of impulses and, if the individual gives in to the emotions or impulses, it is a conscious choice to do so.

It is important to distinguish self-regulation from similar concepts. Self-regulation is similar to self-control, however, not identical as self-control is typically used to describe the regulating of one’s desires to exert *moral* behaviour, whereas self-regulation is to do with

everyday actions (Peterson & Seligman, 2004). Furthermore, the distinction between self-regulation and self-discipline must be noted. Zimmerman and Kitsantas (2014) emphasize that self-regulation is the regulating of cognitions, emotions and thus behaviours to achieve one's personal objectives. They differentiate the concept to self-discipline by stating that self-discipline is orientated around the management of behaviour, performance and one's immediate environment. The difference thus lies in that self-regulation is the managing of one's emotions and cognitions as opposed to self-discipline, which is purely the control of one's actions, performance and environment. It can thus be concluded that self-regulation is typically a precursor to self-discipline.

2.4.6 Bravery

Bravery is a strength of courage and is therefore orientated around the desire to achieve goals or objectives in the face of internal or external adversity (Peterson & Seligman, 2004). Bravery is historically associated with the overcoming of fear on the battlefield to fight for cause or country. The overcoming of fear, which is a key component of bravery, can also be applied to modern times (Peterson & Seligman, 2004). Bravery is expressed when an individual, for example, takes the moral high ground against popular opinion or still functions through the death of a loved one. The commonality is therefore evident between these two scenarios as the overcoming of fear or distress when placed in difficult situations.

The question is posed, however, by Peterson and Seligman (2004), as to whether bravery can be considered a trait or whether bravery is the attribute of an action. This argument is centred around the well-known psychological debate of the trait-versus-state approach. The notion of bravery is almost always rooted in the accomplishment of some *act,* despite the obstacles that are faced. However, individuals have been known to continually perform acts of bravery which would then suggest bravery as being trait-like. Cramer et al. (1988) argue that an individual is more prone to performing heroic acts when they feel competent to do so. Therefore, if an individual possesses character traits that are typically required to perform the act of bravery, they are more likely to be willing to engage (Kinsella et al., 2017). Therefore, the concept of bravery is a contested one, however, it satisfies Peterson and Seligman's (2005) criteria as a character strength.

2.4.7 Curiosity

Under the virtue of wisdom and knowledge falls the character strength of *curiosity*, which is defined as "one's intrinsic interest in ongoing experience" (Peterson & Seligman, 2004, p. 98). The concept is rooted in a need for knowledge, experience, and information. This need, depending on an individual's level of curiosity, will typically initiate behaviour to satisfy that need. The behaviour then results in either experiencing or gaining knowledge in relation

to what initiated the curiosity (Peterson & Seligman, 2004). Therefore, curiosity is goal-driven and can be split into diversive curiosity (novelty-seeking) or specific curiosity.

Diversive curiosity is associated with the experiencing of new and different experiences to increase one's stimulation (Peterson & Seligman, 2004). This type of curiosity is typically associated with courage or bravery as it can often entail the tolerance of high levels of risk to gain the unique experience. According to Peterson and Seligman (2004), specific curiosity is more orientated around the tolerance and receptivity of unfamiliar values, ideas or notions. Specific curiosity therefore represents a higher level of future orientation and can also be characterised by a satisfaction in problem-solving.

The difference between openness to experience and curiosity should also be clarified. Despite McCrae and Costa (1987) including curiosity as a sub-facet of openness to experience, Peterson and Seligman (2004) believe there is a distinct difference. Openness to experience is a personality dimension that involves "receptivity to novel fantasies, feelings, ideas and values" (Peterson & Seligman, 2004, p. 126). A high level of openness to experience can require imaginative, artistic or novel ways of thinking, all of which don't necessarily satisfy the definition of curiosity. The conceptual difference is thus rooted in curiosity requiring a motivational aspect. Peterson and Seligman (2004) use the example of individuals being high in openness to experience by possessing the ability for introspection through being open-minded, yet are not willing to challenge themselves and experience the outcomes of change. Therefore, curiosity is a driver of action (Peterson & Seligman, 2004) whereas openness to experience is a characteristic of personality (McCrae & Costa, 1987).

2.4.8 Love of Learning

A similar yet distinct concept to curiosity is *love of learning*, which is a character strength that also makes up the virtue of wisdom and knowledge. Love of learning is typically divided into two interpretations. The first interpretation is that love of learning is inherent in human beings as it allows one to adapt and function within their environment (Peterson & Seligman, 2004). Human beings therefore attempt to adapt to the environment by learning specific competencies necessary to navigate their reality. The second approach defines love of learning as unique to individuals and their preferences for specific topics, subjects or areas of interest (Peterson & Seligman, 2004). The second approach allows the concept to be classified as a character strength because it is possible for individuals to possess more or less of the strength.

Love of learning, within an individual, is therefore defined as people who are "positively motivated to acquire new skills or knowledge or to build on existing skills and knowledge" (Peterson & Seligman, 2004, p. 103). When learning is taking place, these individuals are

engaged cognitively and experience positive emotions when it comes to learning skills, gaining knowledge or developing insight (Krapp & Fink, 1992). Love of learning is also particularly affected by the nature of the content and whether it is of interest to that individual. In general, if the content is more interesting to the individual, they are likely to be more engaged (Peterson & Seligman, 2004).

According to Peterson and Seligman (2004), there are two reasons as to why individuals will engage in learning, namely extrinsic and intrinsic motivation. Extrinsic motivation is due to the reward of the outcomes provided by the act of learning, for example, parental approval or monetary gain due to increased skills. Intrinsic motivation is due to the individual's desire to satisfy the need to gain new information or to learn for the enjoyment of learning. The intrinsic motivation theory aligns more with the character strength "love of learning" and will serve as part of the conceptual definition for this study.

2.4.9 Leadership

Peterson and Seligman (2004) classify *leadership* as a strength of justice, with a leader being defined as a person who organises and decides on actions for groups of people. The functions of leaders can be split into two main tasks. Firstly, enabling groups to complete the task for which the group is formed and secondly, maintaining morale as well as positive and healthy relationships between group members (Peterson & Seligman, 2004). These two tasks, however, are typically not mutually exclusive as a leader often has to strike a balance between both functions to maintain an effective, happy group.

The possession of this character strength usually results in individuals assuming dominant roles in social situations or interpersonal relationships. The relationship usually involves a follower and a leader who has assumed the role either by appointment or election (Peterson & Seligman, 2004). The relationship between follower and leader is defined by three factors, namely leader characteristics, follower characteristics, and situational or contextual factors (Peterson & Seligman, 2004). In terms of both the leader and the follower, the inter-relationship between the two individual's personalities may make a difference to the strength or weakness of the leadership. Every leader is different and therefore will likely use different leadership styles, which either have a positive or negative effect on the follower, thus determining the success of the relationship (Phaneuf et al., 2016).

In terms of contextual factors that affect leadership, trait activation theory becomes relevant (Tett & Burnett, 2003). The theory postulates that certain environments or situations increase the impact of certain personality traits on leadership. "Higher-quality" leadership can occur when the contextual factors positively affect the expression of personality traits (Tett & Burnett, 2003). This, therefore, provides an interesting platform off which to analyse the effect

that the context of virtual teams will have on the expression of the character strength leadership.

2.4.10 Fairness

Fairness is the treatment of individuals in an equal manner and the absence of decisions determined by emotion, prejudice or bias found under the virtue of justice (Peterson & Seligman, 2004). Fairness as a character strength is closely linked to the term moral judgment which is defined by Peterson and Seligman (2004, p. 393) as "the development of the cognitive capacity to ascertain what is ethically right and what is ethically wrong, through deliberation of the moral context, the relationships of the people involved, and the relevant values and principles". Therefore, individuals that possess the character strength of fairness have the ability to take the context of the situation, the relationships between parties and the relevant principles as inputs to then produce a judgement on the correct action (Peterson & Seligman, 2004).

Peterson and Seligman (2004) propose that fairness further requires the presence of reasoning to make a moral judgement. They go on to say that reasoning is typically characterised by care reasoning and justice reasoning. The concept of care and justice reasoning differ in two distinct ways. Firstly, there is a difference regarding what aspects will be included when determining fairness. Justice reasoning is typically confined to the use of logic, whereas care reasoning expands the determining criteria to also include caring, compassion and empathy for individuals. Care reasoning still includes logic, it is just not as absolute as justice reasoning. Secondly, there is a difference in the processes of the two types of reasoning. Justice reasoning is the result of balancing the relevant principles, rules, laws and moral responsibilities to reach a judgement or outcome. Care reasoning, on the other hand, strives to utilise compassion in determining a fair course of action to meet the needs of individuals. Both of these approaches, however, require the understanding and inclusion of the moral context in the decision-making process (Peterson & Seligman, 2004).

2.4.11 Kindness

Another strength of the humanity virtue is *kindness*, which is defined as the tendency to demonstrate care, compassion and concern for other people, and therefore act in a kind and selfless manner (Peterson & Seligman, 2004). The defining characteristic of kindness is that the performance of the strength represents no reciprocal gain for the individual. The magnitude of kindness can fluctuate from small acts to large sacrifices in order to demonstrate the strength. The concept of kindness can be founded on the principle that all human beings deserve attention and affirmation, purely as a result of being human. However, kindness must be clearly distinguished from the mere respect of an individual's human rights (Peterson &

Seligman, 2004). Therefore, kindness is seen as an act of going above and beyond the dutiful and principled respect of an individual.

Kindness is without doubt fulfilling, as it can cause individuals to feel content and complete. Furthermore, demonstrating the strength of kindness does not diminish others. Kindness can be contagious and can encourage further acts of kindness, usually within a short time frame (Bryan & Test, 1967). Finally, kindness is trait-like as individuals can consistently demonstrate either high or low levels of kindness. Kindness is not a construct that is just present or absent but can occur in degrees along a continuum (Peterson & Seligman, 2004). Therefore, it is clear that according to the criteria of Peterson and Seligman (2004), kindness can be considered a strength of character.

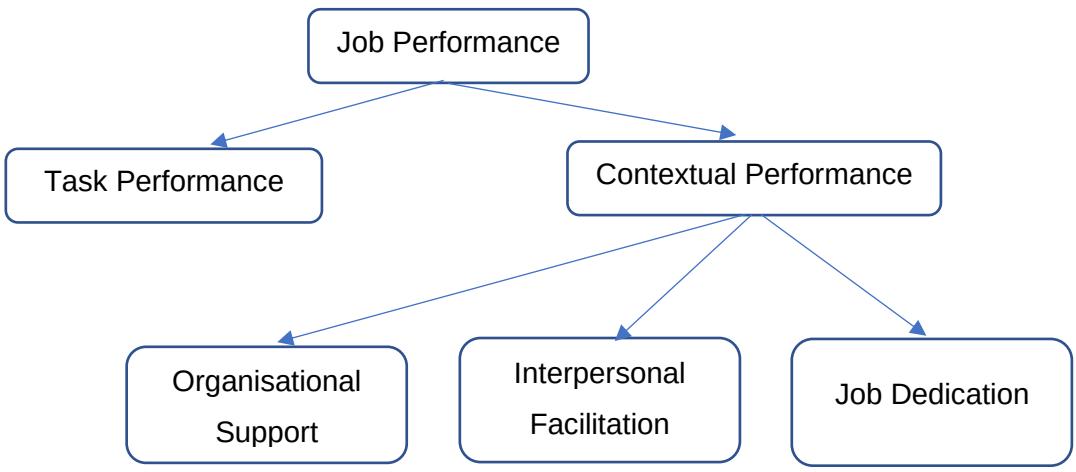
This concludes the description of the 11 highest correlating character strengths according to Harzer and Ruch (2014). The next section will provide a description of the job performance dimensions along with a literature review of the relationship between each dimension and its relevant character strengths.

2.5 Job Performance and Character Strengths

Job performance can be split into task performance and contextual performance (Harzer & Ruch, 2014; Motowidlo & Van Scotter, 1994; Rego et al., 2010). Contextual performance can be further subdivided into three main dimensions, namely, interpersonal facilitation, organisational support and job dedication (Borman et al., 2001; Van Scotter & Motowidlo, 1996). This creates four distinct dimensions which contribute to the overall performance of individuals in the work environment which, to summarise, are task performance, interpersonal facilitation, organisational support, and job dedication.

Figure 2

Job Performance Constructs



Note. Adapted From “The role of character strengths for task performance, job dedication, interpersonal facilitation, and organizational support”, by C. Harzer and W. Ruch, 2014, *Human Performance*, 27(3), p. 183-205 (https://doi.org.10.1080/08959285.2014.913592). Copyright 2014 by Taylor & Francis Group, LLC. Reproduced with permission.

The four dimensions of job performance will be discussed and then dissected in terms of their relationship with each correlated character strength according to Harzer and Ruch (2014), by providing theoretical support to describe the nature and magnitude of the relationship. Furthermore, the application to teams and virtual teams will be discussed.

2.5.1 Task performance

Task performance includes any part of the process in the transformation and provision of goods and services, whether it be administrative or a support function. Task performance is further defined as having a direct effect on the organisation’s technical core, by upholding, executing and servicing its technical requirements (Borman & Motowidlo, 1997).

According to Borman and Motowidlo (1997), there are two types of task performance. The first involves the performance of transforming raw materials into the finished product which is sold to customers. The second involves performing the administrative, organisational, strategic or legal duties which allow the business to operate. This is known as serving the organisation’s technical core. Both types of task performance therefore represent a positive, contributional value as they increase the capability of the organisation to produce (Borman & Motowidlo, 1997).

A significant determinant in the variation of task performance is the presence of knowledge, skills and abilities (KSA; Motowidlo & Van Scotter, 1994). Individuals have different levels of KSA, which results in higher or lower proficiency in task activities and therefore variation in task performance (Motowidlo & Van Scotter, 1994). Furthermore, they postulate that personality characteristics will predict contextual performance better than task performance. This could apply to the purpose of this study by suggesting that, in virtual teams, character strengths will better predict contextual performance than task performance. Despite this, Harzer and Ruch (2014) still found that task performance is consistently associated with perseverance, honesty, teamwork, prudence and self-regulation. These constructs will be further analysed in terms of their relationship to task performance and the application thereof to the context of virtual teams.

2.5.1.1. Perseverance. Perseverance does account for variability in task performance (Jachimowicz et al., 2017; Littman-Ovadia & Lavy, 2012; Motowidlo & Van Scotter, 1994) and there are various individual differences that can affect the relationship between perseverance and task performance. Higher levels of perseverance can result in increased levels of job

performance, however, according to Jachimowicz et al. (2017), it is typically dependent on the employee's type of goals. If employees pursue the right type of goals, then perseverance is aimed in the right direction and can increase task performance. However, if the goals are not aligned to the organisational measures of performance, then perseverance may not necessarily result in higher job performance. In addition, Littman-Ovadia and Lavy (2012) found that perseverance correlated highly with the big five personality trait of conscientiousness. Therefore, as conscientiousness correlates with task performance, perseverance can also be associated with a higher quality of task performance (Jachimowicz et al., 2017).

Perseverance is critical in the performance domain of virtual teams (Duarte & Snyder, 2001, as cited in Krumm et al., 2016). Perseverance includes aspects of self-regulation as well as stamina in the face of adversity, obstacles and interruptions (Hertel et al., 2006). Virtual team members therefore typically have to deal with many distractions and interruptions in their home environments and, therefore, perseverance is required to still complete tasks effectively (Warkentin et al., 1997).

Hypothesis 1a: The character strength of perseverance positively correlates with self-rated individual task performance in virtual teams.

2.5.1.2 Honesty. There is very little research with regard to the use of honesty in predicting positive job performance, as the majority of research revolves around counter-productive work behaviours and the negative effect on job performance (Oh et al., 2014). The majority of research is thus based on the effect of honesty on contextual performance. Three studies were the exception, however, they found contrasting results.

Harzer and Ruch (2014) found that honesty was consistently associated with task performance due to the fact that acting in a sincere or honest manner would ensure individuals achieved the required work outcomes. This is likely because these individuals are honest and authentic within themselves regarding what must be achieved, how long it may take and the obstacles in the way of achieving it. However, Oh et al. (2014) found that honesty explains no additional validity in task performance over and above the effect of cognitive ability and the big five personality dimensions. These results are also supported by Lee et al. (2019), who found that honesty predicted almost no incremental validity in task performance over and above contextual performance. Notably, both studies measured *honesty and humility* as a character trait, which does not directly satisfy the strict definition of the character strength by Peterson and Seligman (2004). However, this does not affect the conclusions drawn because the presence of humility would only increase the variance.

In terms of virtual teams, honesty is very important for the effective coordination and collaboration of team members (Jarvenpaa et al., 1998; Zhang & Sun, 2022). This is due to the fact that honesty can have a significant impact on an individual's perception of virtual team members' integrity and abilities (Jarvenpaa et al., 1998). Therefore, when individuals within virtual teams trust each other, this usually results in the higher quality achievement of team tasks (Sarker et al., 2000; Zhang & Sun, 2022).

Hypothesis 1b: The character strength of honesty positively correlates with self-rated individual task performance in virtual teams

2.5.1.3 Teamwork. Harzer and Ruch (2014) postulate that teamwork predicts task performance in virtual teams because carrying out one's responsibility in a team is indicative of performing one's job well. Other than Harzer and Ruch (2014), there is limited research as to the effect of an *individual's* propensity for teamwork and the effect on their task performance. It will therefore be interesting to investigate the nature of the relationship through this study.

The application in virtual teams will be of interest as virtual team members may struggle to develop a teamwork orientation or may be found to not possess it at all (Mihhailova, 2009). Virtual team members, due to the nature of dispersed teams, may often spend time alone and are therefore not typically required to work in traditional teams (Mihhailova, 2009). As indicated earlier by Gibson and Cohen (2003), one of three important characteristics in defining a virtual team is that the members act as part of the team. It is therefore critical to determine the relationship between teamwork and task performance and whether the context of virtual teams affects an individual's propensity to demonstrate teamwork.

Hypothesis 1c: The character strength of teamwork positively correlates with self-rated individual task performance in virtual teams.

2.5.1.4 Prudence. Prudence, as defined earlier, is the organisation or future orientation regarding one's life or decisions. Therefore prudence is likely to be associated with task performance as this character strength can provide individuals with the ability to organise, manage tasks and not take unnecessary risks, which will naturally relate to the ability to perform a task (Harzer & Ruch, 2014). Hogan and Hogan (2010) found that the presence of prudence in individuals positively affected whether truck drivers were involved in accidents, which would be an indicator of task performance as a truck driver. Cable and Edwards (2004) found that conscientiousness, and therefore possibly prudence, is highly influential in team environments. Furthermore, Harzer and Ruch (2014) found that the character strength of

prudence was consistently associated with task performance across many organisations and professions.

In terms of virtual teams, there is limited research on the narrow definition of prudence as theorised by Peterson and Seligman (2004). However, there is more literature on the effect of conscientiousness in virtual teams. Conscientiousness describes individuals as focused on achievement, organised and measured in their actions (Costa & McCrae, 1992), and therefore there seems to be a conceptual overlap between conscientiousness and prudence as constructs. This is proved by Murphy and Lee (1994), who found in terms of the big five taxonomy, that prudence demonstrated the largest conceptual overlap with conscientiousness. Therefore, we can use the effect of conscientiousness on task performance to provide insight into the effect that prudence may have.

Zhang and Turel (2012) found that higher levels of conscientiousness in virtual team members resulted in an increased level of virtual team performance. This does not speak to individual task performance specifically, but an increase in overall team performance should naturally follow an increase in many individuals' performances. Zhang and Turel (2012) postulate that the increased performance in virtual teams as a result of conscientiousness is due to the fact that the tracking, monitoring and feedback in virtual teams are lacking compared to face-to-face teams. Individuals, therefore, display higher levels of individual conscientiousness as they can't benchmark their efforts against other members to thus achieve successful task performance (Zhang & Turel, 2012).

Hypothesis 1d: The character strength of prudence positively correlates with self-rated individual task performance in virtual teams.

2.5.1.5 Self-regulation. Gol and Royaei (2013) found, in a study performed on teachers, that self-regulation significantly correlated with job performance. The results reflected the body of research on individual differences with regard to work performance (Gol & Royaei, 2013). Self-regulation as a character strength involves the controlling of one's actions and the process of achieving one's goals (Peterson & Seligman, 2004) and therefore is related to the successful achievement of tasks and thus task performance (Gol & Royaei, 2013). Furthermore, numerous empirical studies have shown that job performance is affected by self-regulation activities (Kluger & DeNisi, 1996; Locke & Latham, 1990; Stajkovic & Luthans, 1998).

In terms of virtual teams, Blackburn et al. (2003) found that self-regulation, within an individual, is vital to contributing to the success of virtual teams. Self-regulation, as mentioned previously, is the directing and guiding of one's own goals (Peterson & Seligman, 2004). In a

virtual team, there is no leadership figure physically watching over employees and therefore members should have the ability to motivate themselves (Blackburn et al., 2003). Furthermore, a by-product of self-regulation is time management (Blackburn et al., 2003; Peterson & Seligman, 2004). Individuals in virtual teams have to balance the responsibilities from local environments as well as responsibilities to other team members in different time zones, and therefore time management is an important trait to possess (Blackburn et al., 2003). The presence of self-regulation, therefore, is likely to positively affect the outcomes of an individual's task performance in virtual teams.

Hypothesis 1e: The character strength of self-regulation predicts self-rated individual task performance in virtual teams.

2.5.2 Contextual Performance

Contextual Performance does not directly affect the technical processes of an organisation but rather shapes, improves or negatively impacts the environment within which the technical core must function (Borman & Motowidlo, 1997). Contextual performance is a discretionary behaviour that affects the psychological climate of the organisation, department or team which, in turn, has an indirect effect on the technical processes of the organisation (Borman & Motowidlo, 1997). An important difference between task and contextual performance is that task performance may vary across organisations, depending on organisational requirements and job design, whereas contextual performance is relatively similar across organisations and different fields of work (Borman et al., 2001).

Contextual performance is often referred to as organisational citizenship behaviour (OCB) which is a concept defined by Organ (1988, p. 4) as "individual behaviour that is discretionary, not directly or explicitly recognised by the formal reward system, and that in the aggregate promotes the effective functioning of the organization". OCB is therefore very similar to contextual performance as evident particularly by the term discretionary, which indicates that it is the choice of the individual to perform the behaviours and the behaviour is not enforceable by the organisation (Organ & Bies, 1989). However, the major difference between the two concepts is that OCB must be extra-role (on top of the typical expected daily tasks) and non-rewarded, whereas contextual performance does not (Organ, 1997). Contextual performance is not extra-role because the behaviours contribute to the environment in which the individual functions. Contextual performance can also be required as an aspect of the job and therefore rewarded through performance appraisals. Therefore,

contextual performance is considered a modern approach to the definition of this construct (Organ, 1997).

Contextual behaviours are also deemed important in the work environment as they are critical to organisational success (Katz & Kahn, 1978) and can decrease conflict between departments (Smith et al., 1983). Furthermore, contextual behaviours include the upholding of inter-employee relationships, cooperating with others, taking on challenging tasks and looking for additional tasks to help the organisation (Motowidlo & Van Scotter, 1994).

The three dimensions of contextual performance, as mentioned earlier, namely interpersonal facilitation, job dedication and organisational support, will be discussed further in terms of their highest correlating character strengths according to Harzer and Ruch (2014) and in terms of any relevant virtual teams literature.

2.5.2.1 Interpersonal Facilitation. Interpersonal facilitation describes the attitude towards other employees or staff members by their willingness to help, cooperate and teach or assist (Harzer & Ruch, 2014; Van Scotter & Motowidlo, 1996). Interpersonal facilitation goes beyond the necessary requirements of one's role (Venkataramani & Dalal, 2007). This sub-dimension, therefore, contributes to the overall interpersonal or social context within which the technical core functions, thereby allowing the technical processes to take place effectively (Van Scotter & Motowidlo, 1996). Interpersonal facilitation was highly correlated to character strengths of teamwork, leadership, fairness and kindness (Harzer & Ruch, 2014).

2.5.2.1.1 Teamwork. As mentioned earlier, the character strength of teamwork is likely to lead to the formation of better interpersonal relationships within virtual teams (Sosik & Zhu, 2020). The character strength of teamwork is defined as including loyalty, social responsibility and "promotes relationships of reciprocity" (Cameron & Sosik, 2016, p. 4). These types of relationships encourage a collaborative approach to employees in virtual teams (Cameron & Sosik, 2016).

Furthermore, Sosik (2015) found that teamwork is associated with increased interpersonal trust, which in turn increases engagement and reciprocity between virtual team members. Teamwork is likely to lead to better interpersonal relationships and thus promote loyalty and social responsibility between geographically dispersed employees (Sosik & Zhu, 2020). The outcome of this process and the enhancement of the relationship between employees is vital, due to the level of dehumanization and social isolation prevalent in virtual teams (Beer et al., 1984; Bergiel et al., 2008).

From a theoretical perspective, an important aspect of teamwork is the ability to be cognizant of others, past one's self (Peterson & Seligman, 2004). Therefore, this is likely to

translate into interpersonal helping when required, as evident by the consistent association found between interpersonal facilitation and teamwork (Harzer & Ruch, 2014). However, the character strength of teamwork may be less likely to predict interpersonal facilitation in virtual teams, as individuals' level of teamwork is lower in virtual teams than in face-to-face teams (Williams & Castro, 2010).

Hypothesis 2a: The character strength of teamwork positively correlates with self-rated individual interpersonal facilitation in virtual teams.

2.5.2.1.2 Leadership. Leadership typically has a significant influence on normal team performance and thus individual job performance (Bass, 1990). Leaders can affect interpersonal facilitation in a number of ways. Firstly, a requirement of leaders in effective teams is to inspire team members (Conger & Kanungo, 1998). This is achieved through the communication of the strategic vision and goals of the team or group (Conger & Kanungo, 1998). Furthermore, leaders have the ability to enhance interpersonal relationships within teams (Tyran et al., 2003). This can typically be achieved by encouraging, guiding and supporting team members which can lead to a unified, co-operating and collaborative team (Tyran et al., 2003). Therefore, leadership in normal teams is clearly important in fostering interpersonal facilitation.

In terms of virtual teams, Tyran et al. (2003) found that leadership is critical to the functioning of virtual teams. The same study found that the specific leadership style of the individual affects the success of the team. Virtual team leaders that are inspiring and motivating, generally were held in higher regard by team members. Furthermore, these same leaders made more effort to individually motivate employees through virtual mediums and this is appreciated by other team members. Therefore, it is evident that individuals who possess leadership abilities, and thus likely possess leadership as a character strength, have higher levels of interpersonal facilitation.

Hypothesis 2b: The character strength of leadership positively correlates with self-rated individual interpersonal facilitation in virtual teams.

2.5.2.1.3 Fairness. According to Harzer and Ruch (2014), fairness is consistently associated with interpersonal facilitation across organisations. In addition, Aryee et al. (2004), found that fairness is related to interpersonal facilitation at an organisational level. These findings do not prove that the character strength of fairness will affect an individual's interpersonal facilitation entirely, but it does show the employee's reaction to a perception of fairness, which is a positive one. In terms of inter-individual fairness, it was found that

interactional fairness (fairness between individuals) has a significant effect on the attitudes and behaviours of employees (Qiu et al., 2009). Furthermore, the authors found that a higher level of interactional fairness resulted in a higher quality of interpersonal relationships between individuals.

According to Reilly and Aronson (2009), contextual performance behaviours such as co-operating and assisting team members, i.e. interpersonal facilitation, are even more important in virtual teams. The authors go on to say that treating employees in a fair and equitable manner encourages the performance of contextual behaviour. Furthermore, in terms of leadership in virtual teams, Gibson and Cohen (2003) argue that contextual performance is significantly affected by whether employees are treated fairly and equitably by leaders. It is therefore evident that the quality of fairness in individuals is valued by employees and promotes behaviours such as contextual performance and interpersonal facilitation.

Hypothesis 2c: The character strength of fairness positively correlates with self-rated individual interpersonal facilitation in virtual teams.

2.5.2.1.4 Kindness. Harzer and Ruch (2014) found that kindness as a character strength allowed employees to assist and help their co-workers. The presence of kindness, the tendency to demonstrate care, compassion or concern for other people (Peterson & Seligman, 2004), encouraged the performance of behaviours that are linked to interpersonal facilitation. Another study suggested that individuals with higher levels of kindness or altruism are more likely to perform behaviours of interpersonal facilitation (Abod, 2001). Furthermore, it was found that when managers are seen to exhibit kindness to employees, this increases the probability that interpersonal facilitation will take place between other employees (Treadway et al., 2013). The authors stated that employees are more likely to “be helpful, kind, and considerate toward others in the workplace” (Treadway et al., 2013, p. 243) which directly aligns with the definition of interpersonal facilitation (Van Scotter & Motowidlo, 1996). Furthermore, the presence of altruism or kindness is associated with the quality of interpersonal relationships (Treadway et al., 2013; Uhl-Bien & Maslyn, 2003).

In terms of virtual teams specifically, there is limited literature as to the effects of kindness on interpersonal facilitation. However, Cogliser et al. (2012) state that kindness is an important quality in the virtual workplace. The authors went on to find that agreeableness, of which kindness is an associated quality, predicted the social aspects of leadership in virtual teams. Therefore, from a leadership perspective, kindness is important for interpersonal facilitation in virtual teams. It will thus be valuable to determine whether the above findings are also applicable to normal virtual team members.

Hypothesis 2d: The character strength of kindness positively correlates with self-rated individual interpersonal facilitation in virtual teams.

2.5.2.2 Organisational Support. Organisational support is the "following of organisational rules and procedures as well as endorsing, supporting, and defending organizational objectives" (Borman et al., 2001; Harzer & Ruch, 2014, p. 178). Borman et al. (2001) describe organisational support as possessing three subdimensions, namely representing, loyalty and compliance. Representing pertains to favourably representing the organisation by supporting positive aspects and achievements, while defending the organisation from criticism. Loyalty speaks to an employee's likelihood of staying with the organisation through tough periods and short-term difficulties or challenges. Finally, compliance involves an employee's tendency to adhere to company policy, procedures and practices (Borman et al., 2001).

Organisational support, being a subdimension of contextual performance, is closely linked to organisational citizenship behaviour (OCB). OCB can be split into four dimensions, according to Moorman and Blakely (1995), which are interpersonal helping, individual initiative, personal industry and loyal boosterism. Loyal boosterism is defined as the endorsing of the organisation to anyone outside the organisation (Moorman & Blakely, 1995). The concept is very similar to the loyalty and representing aspect of the definition of organisational support, and therefore there is a certain amount of conceptual overlap between the two constructs. However, the other aspects of OCB fall outside the strict definition of organisational support as defined by Borman et al. (2001).

Harzer and Ruch (2014) found that organisational support was consistently linked with perseverance, kindness, teamwork, and self-regulation. These character strengths will therefore be analysed further in terms of their relationship with organisational support and their relevance to virtual teams.

2.5.2.2.1 Perseverance. Harzer and Ruch (2014) found that there was a consistent association between perseverance and organisational support. This association is expected as according to Brink (2014) the persistence level of employees is an important contributing factor to the willingness of employees to defend the organisation. Furthermore, motivation is an important determinant of employees' levels of contextual performance (Organ et al., 2005) and, according to Mitchell (1997) as cited in Teal (2013), motivation is defined as persistence of actions. Organ (1997) also stated that contextual performance in itself is defined as an action characterised by perseverance as it requires extra-role effort. It is thus plausible that

the perseverance levels of employees would contribute to the level of organisational support, however, the research in this area is relatively sparse and more empirical evidence is needed.

In terms of virtual teams, determining whether perseverance as a character strength affects organisational support will be valuable to measure as more effort from individuals is typically needed for functioning in virtual teams (Garloch et al., 1997). The aforementioned authors found members of virtual teams experience significantly more frustration and less satisfaction as opposed to face-to-face teams. Building on this, Mafini et al. (2013) found that lower levels of job satisfaction indicated lower levels of organisational loyalty. Therefore, it will be valuable to determine whether increased perseverance or effort can help individuals overcome these difficulties, resulting in higher satisfaction and therefore contributing to increased levels of organisational support in virtual teams.

Hypothesis 3a: The character strength of perseverance positively correlates with self-rated individual organisational support in virtual teams.

2.5.2.2.2 Kindness. Expectedly, kindness is consistently related to organisational support (Harzer & Ruch, 2014). This is theoretically sound as characteristics of organisational support include acts of loyalty, public promotion and defending the organisations. A defining characteristic of kindness is that there is typically no reciprocal gain for performing the act (Peterson & Seligman, 2004), and the aforementioned acts present no extra reward for the individual. Furthermore, kindness in the form of altruism as well as compliance with organisational rules, is consistently associated with the performance of OCB (Akinbode, 2011; Todd, 2003). Therefore, if individuals demonstrate kindness as a character strength, they are more likely to be willing to engage in organisational supporting behaviours.

The presence of virtual teams may facilitate an increased expression of kindness from individuals (Constant et al., 1996). It was found that willingness to share information increases when performed over computer networks (Constant et al., 1996). They further postulate that individuals will perform acts of kindness if they have the ability as experts and if help is needed by others. Therefore, individuals who demonstrate the character strength of kindness may be more prone to expressing organisational support by complying with organisational rules in virtual teams and staying loyal to the organisation.

Hypothesis 3b: The character strength of kindness positively correlates with self-rated individual organisational support in virtual teams.

2.5.2.2.3 Teamwork. According to Harzer and Ruch (2014), teamwork is highly associated with organisational support as characteristics of the dimension, such as loyalty and compliance, are also inherent characteristics of teamwork. In confirmation of this, Foote and Tang (2008) found that an individual's commitment to the team is significantly correlated to citizenship behaviour or organisational support. Similarly, this relationship was supported and the correlation proven to be strong and significant by various other studies (Bishop et al., 2000; Bishop & Scott, 2000; de Lara & Rodriguez, 2007).

However, Williams and Castro (2010) found that an individual's level of teamwork orientation is higher in face-to-face teams than in virtual teams. Their research also found that an individual's teamwork orientation is affected by the level of personal learning an individual experiences within the team. This is significant as individuals in virtual teams, that possess the character strength of teamwork, should also facilitate the learning of others by sharing information and being committed to group goals (Williams & Castro, 2010). This represents a commitment to team goals and thus organisation goals, and therefore teamwork is expected to be positively correlated to organisational support in virtual teams.

Hypothesis 3c: The character strength of teamwork positively correlates with self-rated individual organisational support in virtual teams.

2.5.2.2.4 Self-regulation. Self-regulation was the lowest of the four highest correlations to organisational support (Harzer & Ruch, 2014). This relationship is, however, theoretically sound as self-regulation typically manifests itself in the adherence to societal and organisational standards (Peterson & Seligman, 2004). Therefore, if individuals who possess this character strength feel that it is required by the company, or its people, to provide support, defend the organisation or remain loyal, these individuals may be inclined to do so. Self-regulation speaks to the regulating of one's emotions and actions for long-term benefit, and would thus encourage loyalty, representation, and compliance.

Virtual teams require an individual to possess self-regulation as a strength (Blackburn et al., 2003). Self-regulation entails the controlling and planning of one's actions (Peterson & Seligman, 2004) and the product of this is effective time-management abilities (Blackburn et al., 2003). Virtual teams require the individual to manage the requirements of the job while also balancing the needs of their teammates (Blackburn et al., 2003). This includes liaising with teammates and therefore helping, assisting or providing advice or input to better organisational processes or systems. However, as mentioned previously, there is also the added difficulty of distractions in the local environment (Warkentin et al., 1997). Time management and self-regulation are therefore deemed necessary in-home environments to

keep employees productive, while still engaging in organisation-supporting activities. Self-regulation is thus likely to be correlated with organisational support in virtual team members.

Hypothesis 3d: The character strength of self-regulation positively correlates with self-rated individual organisational support in virtual teams.

2.5.2.3 Job Dedication. Van Scotter and Motowidlo (1996) define job dedication as the eagerness and extra effort when carrying out tasks or jobs assigned to an employee. This facet of contextual performance is associated with volunteering or putting oneself forward to complete extra or more difficult tasks. The authors go on to further describe the concept as acts rooted in self-discipline, which results in conscientious working as well as compliance towards organisational goals. Taking the initiative to enhance or complete tasks, as well as not needing instruction to solve work-related problems, is an important characteristic of job dedication (Van Scotter & Motowidlo, 1996). Furthermore, job dedication is motivationally driven and is the base on which successful task performance and commitment to organisational goals are founded. Harzer and Ruch (2014) found that bravery, perseverance, curiosity, self-regulation and love of learning were the highest correlating character strengths with job dedication.

2.5.2.3.1 Bravery. Harzer and Ruch (2014) postulated that the consistent association of bravery with job dedication was supported by Peterson and Seligman's (2004) definition of bravery. Bravery requires the overcoming of adversity which Harzer and Ruch (2014) argue is the cause of the correlation as job dedication requires extra effort to achieve organisational goals and objectives despite adversity or obstacles (Van Scotter & Motowidlo, 1996).

Building on the above argument, virtual teams present significant challenges for the individual. As referenced earlier, isolation, misunderstanding and ambiguity are all obstacles that virtual team members may have to navigate (Beer et al., 1984; Bergiel et al., 2008). In addition, it was found that members of virtual teams operating through an online chat medium struggled significantly more with problem-solving or completing tasks (Garloch et al., 1997; Hambley et al., 2007). Therefore, the character strength of bravery should positively correlate with job dedication in virtual teams as there are significantly more challenges to overcome, which, once again, requires extra effort from the individual.

Hypothesis 4a: The character strength of bravery positively correlates with self-rated individual job dedication in virtual teams.

2.5.2.3.2 Perseverance. The theoretical reasoning for the association of perseverance with job dedication (Harzer & Ruch, 2014) is very similar to that of bravery and job dedication. The presence of perseverance is inherently required in the definition of job dedication as job dedication entails the overcoming of obstacles to support organisational goals (Van Scotter & Motowidlo, 1996). The overcoming of obstacles therefore requires extra effort to persist and overcome challenges. Furthermore, Van Scotter and Motowidlo (1996) include the perseverance levels of individuals as a measure of job dedication.

In terms of virtual teams, the similarities are once again present. As mentioned previously, numerous studies have proved that members of virtual teams must navigate more obstacles than members of traditional face-to-face teams (Beer et al., 1984; Blackburn et al., 2003; Garloch et al., 1997). Therefore, it is likely that perseverance is an important predictor of whether an individual's job dedication will allow him or her to overcome the adversities of virtual teams in order to achieve organisational goals and objectives.

Hypothesis 4b: The character strength of perseverance positively correlates with self-rated individual job dedication in virtual teams.

2.5.2.3.3 Curiosity. Curiosity is associated with job dedication because an important aspect of curiosity is requesting difficult or challenging tasks (Harzer & Ruch, 2014). Curiosity includes an interest in novel tasks which aligns with the definition of job dedication in taking initiative to complete tasks (Harzer & Ruch, 2014). In addition, Demirer et al. (2010), found that curiosity can be considered as an antecedent to organisational commitment, which is a similar concept to job dedication in that effort to complete organisational goals is paramount. Elanain (2007), also concluded that openness to experience, specifically inquisitiveness and curiosity-related aspects, contributed to higher levels of contextual performance, which includes taking initiative and personal industry, both of which are pertinent characteristics of job dedication (Peterson & Seligman, 2004).

Virtual teams are naturally technology-based and therefore a curious nature is beneficial because technology can be difficult to navigate at times (Gibson & Cohen, 2003). Furthermore, a curious disposition is also advantageous as new technology is often required to be learnt and therefore individuals who possess curiosity are more likely to effectively learn new technology, thus displaying job dedication. Gibson and Cohen (2003) also found that individuals must alter their way of thinking and explore new avenues to successfully and competently perform in virtual team roles. Therefore, the relationship between curiosity and job dedication in virtual teams is likely to be a positive one.

Hypothesis 4c: The character strength of curiosity positively correlates with self-rated individual job dedication in virtual teams.

2.5.2.3.4 Self-regulation. It is unsurprising that job dedication is associated with self-regulation (Harzer & Ruch, 2014) as self-regulation is the controlling of one's actions in order to achieve organisational goals (Peterson & Seligman, 2004). Similarly, the concept of job dedication is also rooted in self-discipline and demonstrates a commitment to organisational goals (Van Scotter & Motowidlo, 1996). Another similar characteristic between the two concepts is that individuals who possess self-regulation and individuals who demonstrate job dedication both do not require supervision from superiors (van Eekelen et al., 2005; Van Scotter & Motowidlo, 1996).

The aforementioned conclusion also specifically applies to virtual teams as there is no physical supervision in virtual teams due to the members being geographically dispersed (Blackburn et al., 2003). Therefore, self-regulation is critical to task performance in virtual teams (Blackburn et al., 2003), but it can be theorised that self-regulation would be equally important to job dedication in a virtual setting as members will have to regulate their own motivation. For virtual team members to display job dedication, they cannot be reliant on superiors to push them to achieve, and therefore must display self-regulation by self-assessing, planning the achievement of personal and thus organisational goals, and finally, taking initiative in completing tasks well (van Eekelen et al., 2005; Van Scotter & Motowidlo, 1996).

Hypothesis 4d: The character strength of self-regulation positively correlates with self-rated individual job dedication in virtual teams.

2.5.2.3.5 Love of learning. Farrell (1999) found that a learning orientation in individuals results in a higher level of organisational commitment. This is consistent with Harzer and Ruch (2014), who state that love of learning is associated with job dedication due to the construct definition, including the mastering of novel skills. They go on to postulate that the inherent need or want to master new skills requires increased effort to achieve, despite difficulties, which is similarly an important characteristic of job dedication (Van Scotter & Motowidlo, 1996). Furthermore, job dedication can also be defined as finding better, new and innovative ways of completing tasks (Van Scotter & Motowidlo, 1996). Similarly, Farrell (1999) found that individuals who have a learning orientation can significantly contribute to the level of organisational innovativeness. Therefore, there is a clear conceptual association between love of learning and job dedication.

Gibson and Cohen (2003) state that love of learning is a critical factor in the success of virtual teams. A learning orientation is important in facilitating job dedication as it encourages positive activities necessary for the success of the team's activities. The presence of a learning orientation within virtual team members can encourage knowledge-sharing, inter-member learning, working off other team members and the sharing of constructive and rich feedback (Gibson & Cohen, 2003). All these activities represent job dedication when being performed and therefore it is predicted that the character strength, love of learning, will be positively associated with job dedication in virtual teams.

Hypothesis 4e: The character strength of love of learning positively correlates with self-rated individual job dedication in virtual teams.

2.6 Conclusion

The literature, in general, provides support for the results of Harzer and Ruch (2014), with a few exceptions where the relationship is theoretically sound but has not been clearly defined by any research. The relationship is often apparent in part or through similar conceptual constructs, however, the relationship is far from empirically evident. It is further evident throughout, that there is a lack of significant literature regarding the relationship between character strengths and job performance in the specific context of virtual teams. It is also apparent that a large portion of the literature on virtual teams is outdated, and with the recent technological advancements due to the Covid-19 pandemic, it is highly likely that the nature of virtual teams has changed significantly. Therefore, considering the literature on the relative importance of virtual teams now and in the future, this study hopes to empirically expand the knowledge base on character strengths and job performance within this context.

3 Research Methodology

3.1 Introduction

The previous two chapters provided a theoretical overview of the nature of the relationships between the variables within the context of virtual teams. As earlier indicated, the current study is based off the work of Harzer and Ruch (2014), and further research found support for the results of the relationships between the highest correlating character strengths and the job performance variables. The literature, however, was generally devoid of empirical evidence confirming the relationship in virtual teams, with many of the relationships plausible yet not concrete. This chapter will outline the methodology utilised to provide evidence and further analyse the nature of the relationships within the context of virtual teams. Initially, the research approach will be discussed, followed by the presentation of the conceptual model. Following this, the sampling design and statistics, data collection procedure and ethical considerations will be presented. The chapter will end with a discussion of the measuring instruments, statistical procedures and the concluding remarks.

3.2 Research Design

The theoretical underpinning for the relationships between the variables was present, however, as mentioned earlier, there is a lack of empirical support for the proposed relationships within the virtual team context. A quantitative design approach has therefore been used to provide statistical support and evidence to describe the relationships within the desired context and test the proposed hypotheses.

The research followed a cross-sectional, non-experimental, quantitative research design, in an attempt to describe the nature of the relationship between each character strength (Harzer & Ruch, 2014), and the different dimensions of job performance in the virtual team context. Previous research indicates that the presence of character strengths is positively correlated with certain job performance dimensions (Harzer & Ruch, 2014), however, the nature of this relationship and the ability of character strengths to influence job performance had not yet been tested in virtual team settings. This cross-sectional study, therefore, aimed to measure the correlation between character strengths and individual job performance, as well as the variance caused in the job performance dimensions as a result of the presence of character strengths in virtual team members. Character strengths have been measured through a self-rating questionnaire which indicates the presence of character strengths in individuals (Peterson & Seligman, 2004). The four dimensions of job performance namely task performance, job dedication, organisational support and interpersonal facilitation have been measured through four combined self-rating questionnaires (Harzer & Ruch, 2014).

This, once again, results in the statement of the research question: “Which character strengths are the most strongly associated with the dimensions of self-rated individual job performance in virtual teams?”

A cross-sectional research design was implemented to gather the data from a single respondent at one specific point in time (Van der Stede, 2014). Cross-sectional research is typically utilised to measure prevalence and determine causation (Mann, 2003). This type of study is renowned for being efficient and economical with regard to resources (Mann, 2003). However, a disadvantage of cross-sectional studies is “differentiating cause and effect from simple association” (Mann, 2003, p. 57). It is sometimes unclear as to whether the independent variable (IV) is the cause of the variation in the dependent variable (DV), or whether the DV is not necessarily caused by the IV but rather a predisposition as a result of the presence of the independent variable.

The design of the study is also considered non-experimental as the nature of the study is observational and the results are typically used for descriptive purposes (Thompson & Panacek, 2007). The researcher has not manipulated or changed the IV of character strengths. Therefore, the study is considered non-experimental as the researcher has strictly observed the results of the study and has had no effect or manipulated any of the variables (Thompson & Panacek, 2007).

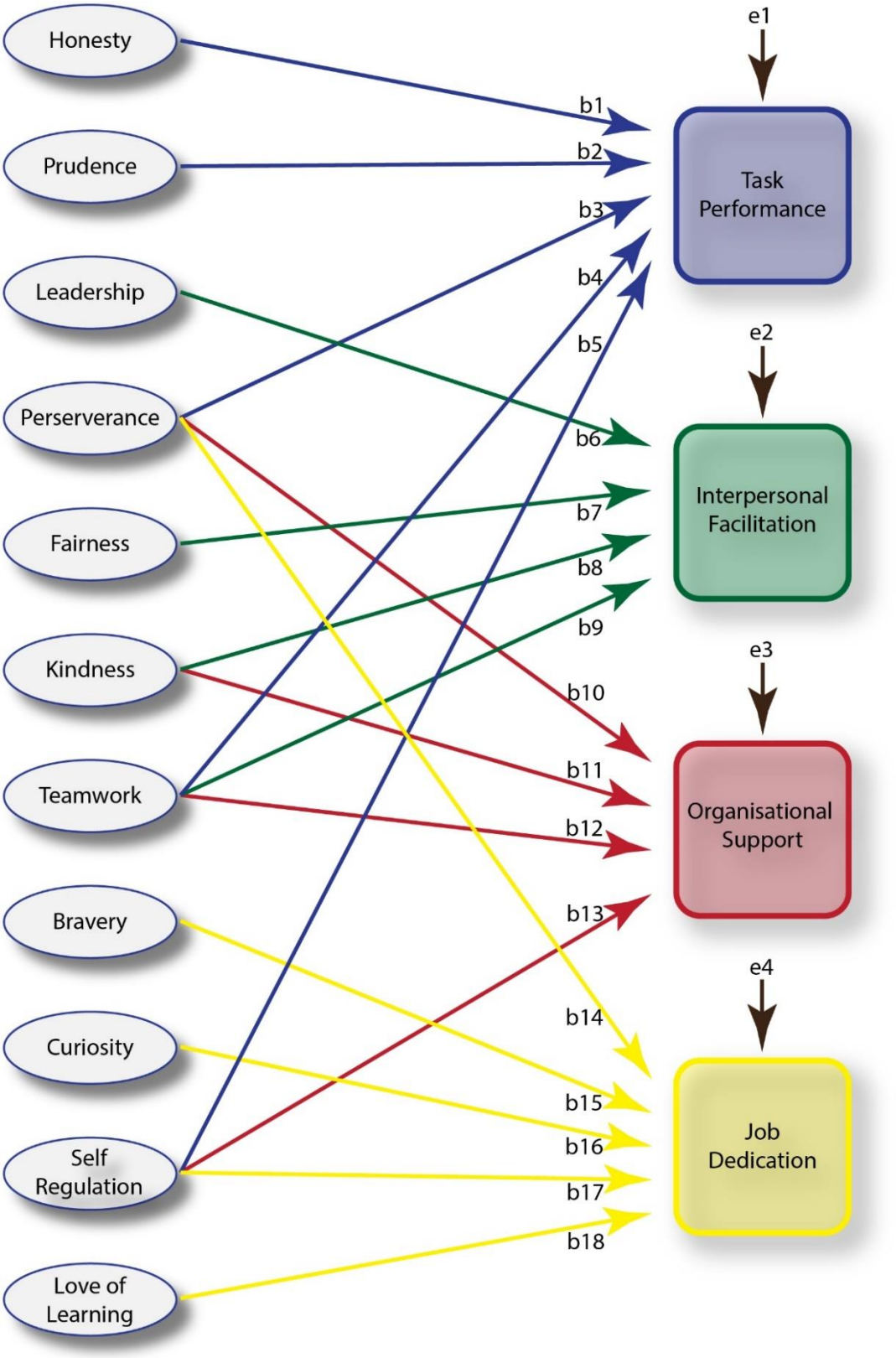
3.3 Conceptual Model

It is evident that research has been performed within the domain of various character strengths and the consequential effect on job performance. However, the literature is lacking empirically, and even more specifically regarding the effect in virtual teams.

This translates to the substantive and operational research hypotheses, as indicated in chapter 2, which is that the presence of certain character strengths (Harzer & Ruch, 2014) will be strongly associated with the hypothesized dimensions of self-rated individual job performance in virtual teams. The conceptual model as indicated in Figure 3 is therefore proposed.

Figure 3

Conceptual Model



The conceptual model represents the hypothesized relationships for each character strength and its respective dimension of job performance in the context of virtual teams.

The above conceptual model is proposed where:

- b_1 is the relationship between honesty and individual task performance
- b_2 is the relationship between prudence and individual task performance
- b_3 is the relationship between perseverance and individual task performance
- b_4 is the relationship between teamwork and individual task performance
- b_5 is the relationship between self-regulation and individual task performance
- e_1 represents error term which includes all external factors, excluding the relevant independent variable, that influences variance in the individual task performance

- b_6 is the relationship between leadership and individual interpersonal facilitation
- b_7 is the relationship between fairness and individual interpersonal facilitation
- b_8 is the relationship between kindness and individual interpersonal facilitation
- b_9 is the relationship between teamwork and individual interpersonal facilitation
- e_2 represents error term which includes all external factors, excluding the relevant independent variable, that influences variance in individual interpersonal facilitation

- b_{10} is the relationship between perseverance and individual organisational support
- b_{11} is the relationship between kindness and individual organisational support
- b_{12} is the relationship between teamwork and individual organisational support
- b_{13} is the relationship between self-regulation and individual organisational support
- e_3 represents error term which includes all external factors, excluding the relevant independent variable, that influences variance in individual organisational support

- b_{14} is the relationship between perseverance and individual job dedication
- b_{15} is the relationship between bravery and individual job dedication
- b_{16} is the relationship between curiosity and individual job dedication
- b_{17} is the relationship between self-regulation and individual job dedication
- b_{18} is the relationship between love of learning and individual job dedication
- e_4 represents error term which includes all external factors, excluding the relevant independent variable, that influences variance in individual job dedication

3.4 Population and Sampling

The purpose of quantitative research is to measure the effect of the independent variable (character strengths) on the dependent variable (dimensions of job performance). However, the critical aspect of this research is that the researcher is particularly interested in the relationship between these variables within the context of virtual teams. This research has thus been orientated around the measurement of the variables within and pertaining to virtual team members. Therefore, virtual team members were contacted with regard to participating in the study.

3.4.1 Sampling Design

The aforementioned characteristics of virtual teams, as mentioned in chapter 2, have been used to uphold the integrity of the definition of a virtual team for the purpose of the study (Gibson & Cohen, 2003; Lipnack & Stamps, 1997). To summarise the three characteristics: virtual team members must be a part of an interdependent team; must be geographically dispersed; and must communicate through a virtual medium (Gibson & Cohen, 2003). Teams in which employees were asked to report in person, on set days, were excluded from the sample as it was a possibility that the majority of the communication, such as meetings or work discussions, may be organised for those in-person days. This would have threatened the integrity of the definition of a virtual team.

However, many companies are currently working in a hybrid manner where employees may come into the office sporadically. The researcher evaluated the virtuality of these teams individually, by asking clarifying questions such as the frequency of in-person contact and the reliance on a virtual medium for communication. Therefore, the characteristic of “geographically dispersed” was not strictly used to define virtual teams. Looking specifically at the characteristics of the sample, the respondents were from a variety of different industries and types of organisations ranging from entrepreneurial start-ups to large corporate environments.

There are many differing recommendations in the literature describing methods and processes for determining sample size. Tabachnick and Fidell (1989) tentatively recommend an absolute minimum for regression analysis of five subjects to every IV, which will result in an absolute minimum sample size of 120 subjects. Marks (1966) as cited in Green (1991), proposes for any multiple regression analysis a minimum of 200 subjects is sufficient. Schmidt (1971) recommends a subject-to-variable ratio as high as 15, or even 20, to 1. This would require a sample size as big as 360 to 480 subjects. Despite this, a common rule of thumb is that 10 subjects per IV is a sufficient ratio (Wampold & Freund, 1987). The large number of independent variables in this study would therefore result in a desired sample size of 240,

however with the resources available to the researcher, a sample of n=161 virtual team employees was found.

3.4.2 Data Collection Procedure

The study underwent an ethical clearance procedure by the Stellenbosch University Ethics Committee before data collection commenced. The sample was not specifically concentrated to any specific occupation but aimed to find a wide array of virtual teams from many different industries. The researcher built a sample of the virtual team population by making contact with individuals that operate in a virtual team. Virtual team members were contacted via e-mail, social media and some instant messaging platforms using the snowball sampling technique.

To attain a large enough sample of the population, purposive snowball sampling was employed to get in contact with enough virtual team members. The selection of the sample members was orientated around finding members for a specific purpose related to the research objective (Gupta & Pathak, 2018). Snowball sampling is a particularly useful sampling technique for acquiring samples that are rare or confined by requirements determined by the researcher. This sampling technique, however, has its limitations as researchers run the risk of thus not identifying a sample that possesses enough heterogeneity between members.

The researcher and their supervisor made contact with a few members of virtual teams and asked them to get in touch with other virtual team members. Once the newly contacted virtual team member has agreed to take part, as requested by their colleague, they were sent an e-mail which included information about the study as well as a link to the questionnaire. The beginning of the questionnaire included the informed consent form where virtual team members were made aware of their right to not complete the questionnaire at all or discontinue the study at any time. Virtual team members then completed the character strengths inventory, the job performance questionnaires adapted for self-ratings and a social desirability scale. The results of the questionnaire remain completely anonymous as the virtual team member was not required to provide any identifying information apart from age, gender and period worked in a virtual team. The results of the study were kept confidential in a password-protected folder and were only accessible to the researcher and the supervisor of the study.

3.4.3 Research Ethics

All researchers performing a study in the social, behavioural or educational fields must apply to the Stellenbosch University ethics committee to receive approval to perform the study. All aspects of the study were reviewed and then formally approved by the Departmental Ethics Screening Committee (DESC). The ethical approval document has been included in Appendix

A. This occurred before participants were found, data was collected or any research encounters took place. The standard operating procedure stipulates that researchers must ensure the following conditions are met to obtain ethical clearance to perform the study (Stellenbosch University, 2020).

The Principle Investigator (PI) ensured that no participants took part in the study before providing permission to the researchers through the form. As part of the informed consent, employees were made aware that they can stop participating in the study at any point. The form also included an explanation of the research, its purpose and benefits, the entire procedure which will be followed, the risks that the employee will bear, the specifics with regard to the confidentiality and anonymity of respondents, the identification and contact details of the researcher and, finally, the rights the participants hold while the study takes place. The signed consent forms will be kept for five years after the research study has taken place (Stellenbosch University, 2020).

3.4.4 Descriptive Statistics of Sample

Table 2 contains the descriptive statistics of the sample (n = 161). The most common age range is 25 – 34, likely due to the age of the researcher and the use of the snowball sampling technique. Looking at the number of years employees worked in virtual teams, 83% of virtual team employees had worked in a virtual team for more than at least one year. This is positive for the validity of results as most virtual team members would likely be settled in their roles and familiar with the required technology. Gender was fairly evenly split between males and females. Finally, the majority of the sample was living in South Africa at the time of taking the survey, with a few virtual team members living in the United Kingdom and other countries.

Table 2

Sampling Statistics (n = 161)

Age Range	Percentage Value
16 -24	17%
25 - 34	36%
35 - 44	19%
45 - 54	14%
55 - 64	12%
65 +	2%
Number of years working in a VT	**Percentage Value**
0-1 year	17%
1-3 years	68%
3-5 years	9%
5+ years	7%
Gender	**Percentage Value**
Female	54%
Male	45%
Transgender	1%
Country	**Percentage Value**
RSA	85%
UK	9%
Other	6%

Note. VT = Virtual team

3.5 Measuring Instruments

Three measurement instruments have been utilised for the purpose of the study and have been included in Appendix B. Copyright permissions have been included in Appendix C. The character strengths measure and the social desirability scale have been used in their original form. The job performance measures have been adapted from their original form to be suitable for self-ratings with the assistance of a subject matter expert in scale design. These three instruments were combined into a 118-item questionnaire distributed to virtual team members through a link to SunSurvey.

3.5.1 Values in Action Inventory of Strengths

The first instrument is the Values in Action Inventory of Strengths (VIA-IS; Peterson & Seligman, 2004) which was used to identify and measure the presence of character strengths

of employees in virtual teams. The VIA-IS is a self-report questionnaire that measures the prevalence of 24 character strengths. For the purpose of this study, the shortened, adapted version of the VIA-IS, known as the VIA-72 has been used. The full questionnaire typically contains 240 items and is quite long, but the VIA-72 only contains 72 items, thus making it easier and more convenient for respondents to answer. The 72 questions are made up of the three most internally consistent items for each character strength (*VIA-72*, 2020).

The VIA-72 employs a 5-point Likert-type scale for the three questions per character strength which are then averaged within each relevant scale. Concerning the nature of each question, the respondent was asked to indicate how accurate the statement was with regard to their strength, with 1 indicating “very much unlike me” and 5 indicating “very much like me”. All the questions are phrased in the extremity, for example, *“*I am always coming up with new ways to do things” would be measuring creativity.

The VIA institute has stated that the VIA-72 is substantially equivalent to the VIA-IS (*VIA-72*, 2020), on which an abundance of research has been conducted. The VIA-IS shows very good internal consistency for all scales with a Cronbach’s alpha coefficient ($\alpha > .70$) as well as satisfactory test-retest correlation ($r = .70$) (Park et al., 2004). The VIA-72 however shows even better internal consistency with a Cronbach’s alpha coefficient ($\alpha > .75$) (*VIA-72*, 2020). The validity coefficients of the VIA-72 are slightly lower than that of the VIA-IS at between 0.36 and 0.48 (*VIA-72*, 2020).

Since the VIA-IS and VIA-72 are considered equivalent measures, a few of the studies performed on the more popular measure, the VIA-IS, can be analysed to provide an indication of the psychometric properties of the VIA-72. The standard deviation of the VIA-IS is considered acceptable, typically ranging between .5 and .9 (Park et al., 2004). The VIA-IS also possesses face validity (Peterson & Park, 2004). Furthermore, Khumalo et al. (2008) found that the VIA-IS has acceptable reliability in a South African context. In contrast to this, du Plessis and de Bruin (2015) found that the majority of the character strengths possessed differential item functioning for either one of the demographic variables of gender, ethnicity and home language group. This presents a potential limitation in the South African context.

3.5.2 Job Performance Questionnaire

The job performance questionnaire consists of 30 questions split between the four measures of job performance.

3.5.2.1. Task performance. Task performance was measured through self-ratings on an adapted version of the Task Performance Questionnaire (TPQ; Harzer & Ruch, 2014; Williams & Anderson, 1991). Virtual team members rated themselves on a Likert-type scale, with 1 representing “very much unlike me” and 5 representing “very much like me”. There are

seven items in the questionnaire and an example of a question is, “I adequately perform assigned duties”. The original questionnaire has an excellent internal consistency (α = 91; Diefendorff et al., 2002).

3.5.2.2. Job Dedication Questionnaire. The Job Dedication Questionnaire (JDQ) is an eight-item, supervisory rating questionnaire (Harzer & Ruch, 2014; Van Scotter & Motowidlo, 1996) that was adapted for self-ratings for the purpose of this study. The questionnaire employs a 5-point Likert-type scale structure with 1 representing “very much unlike me*”* and 5 representing “very much like me”. The questionnaire measures persistence, extra effort and discipline with an example item being, “I put in extra hours to get work done on time.” The questionnaire has a high internal consistency (α = .94–.95; Van Scotter & Motowidlo, 1996).

3.5.2.3. Organisational Support Questionnaire. The original Organisational Support Questionnaire (OSQ) is also a supervisory rating-orientated questionnaire (Coleman & Borman, 2000; Harzer & Ruch, 2014), that was also adapted for self-ratings for the purpose of this study. It includes eight items that require virtual team members to rate their own levels of loyalty and allegiance to the company. The questions are presented in a 5-point Likert-type scale format with 1 indicating “very much unlike me*”* and 5 indicating “very much like me”. An example item from the questionnaire is “I endorse, support, or defend organizational objectives”. There is no reliability and validity information available for the original questionnaire.

3.5.2.4. Interpersonal Facilitation Questionnaire. The Interpersonal Facilitation Questionnaire (IFQ) was originally designed to obtain supervisory ratings of an individual’s levels of cooperative, helping and considerate behaviour (Harzer & Ruch, 2014; Van Scotter & Motowidlo, 1996), and the adapted questionnaire will represent the same construct but from a self-rating perspective. The questionnaire contains seven items utilising a 5-point Likert-type scale. The structure of the scale is identical to the previous two questionnaires with 1 indicating “very much unlike me” and 5 indicating “very much like me”. An example item from the questionnaire is “I praise co-workers when they are successful.” The questionnaire demonstrates a high internal consistency (α = .89–.93; Van Scotter & Motowidlo, 1996).

3.5.3 Social Desirability Scale

Social desirability scales are typically used to assess the degree to which respondents bias responses in a self-favouring manner (Paulhus, 2001). This type of scale is therefore particularly valuable for self-report measures (Hart et al., 2015), which is the sole method of data collection for this study. The researcher of this study incorporated a social desirability scale to detect and thus control for socially desirable responding (SDR). The purpose of this

measure's inclusion does not relate to the research objectives but rather was included to mitigate the limitation of self-reporting. The SDR measure that has been incorporated into the questionnaire is the Social Desirability Scale 17 (SDS-17; Stöber, 1999).

The SDS-17, in its original form, is a 17-item scale that measures the presence of SDR by requiring the respondent to indicate whether they consider the statements about themselves to be true or false. The SDS-17 possesses satisfactory convergent validity and reliability (Stöber, 1999). Test-retest reliability was found to be .82 across four weeks while internal consistency ranged from .72 to .75. The SDS-17 was found to be comparable to the Marlon-Crowne Social Desirability Scale with correlations between .67 and .74 (Stöber, 1999). Furthermore, the SDS-17 showed correlations of between .52 and .85 with alternative measures of social desirability such as the Eysenck Personality Questionnaire-Lie Scale and Sets of Four Scale (Stöber, 2001). Therefore, according to Stober (2001, p. 222), "the SDS-17 is a reliable and valid measure of social desirability, suitable for adults of 18 to 80 years of age". For the purpose of this study, one item (originally item 4) was removed from the scale on the recommendation of Stöber (2001). This resulted in a final, 16-item scale measuring SDR in this study.

3.6 Statistical Analysis

The statistical analysis includes item analysis, analysis of descriptive statistics, factor analysis, correlation analysis and regression analysis.

3.6.1 Item Analysis

Item analysis was performed on all the measures used in the study. Item analysis is a valuable tool for assessments as it provides information on the validity and reliability of items in a measure (Kumar et al., 2021)**.** Items in a measure are designed to provide an indication of the magnitude of the underlying latent variable of interest (Furr, 2011). The answers to the items serve as observable indicators of the presence of an underlying variable that has been elicited from the individual being assessed (Furr, 2011). Item analysis is therefore utilised to ensure the accuracy of the observable indicators and whether the latent variable has been correctly and accurately measured.

Item analysis was used to identify any potentially problematic items that were affecting the validity or reliability of the adapted measure. Problematic items may have low construct/content validity as well as being poorly phrased or insensitive and therefore possessing low reliability (Furr, 2011). Item analysis was performed on the questionnaires with the statistical program, Statistica.

3.6.2 Descriptive Statistics

Descriptive statistics were obtained ensuring the suitability and accuracy of the dataset. This included, for example, analysing the minimum and maximum values for any mistakes in the dataset as well as the standard deviations for any discrepancies. Missing items were automatically removed from the dataset entirely. The final step when analysing descriptive statistics is to check for the presence of any biases. At this stage, the data was screened for the presence of SDR by analysing the raw data for the presence of multiple, high social desirability scores.

3.6.3 Factor Analysis

Factor analysis is a statistical procedure frequently used in developing and evaluating psychometric tests (Floyd & Widaman, 1995). According to Furr (2011), factor analysis consists of two main statistical procedures known as exploratory and confirmatory factor analysis. Exploratory factor analysis (EFA) is largely used to analyse the dimensionality of the measures and improve the fit of a model when necessary. Principal component analysis (PCA), which was used for this study, is a similar process to that of EFA however there are distinctions, which include different insights provided, formulations and objectives (Joliffe & Morgan, 1992). PCA is typically performed with correlated variables and focuses on explaining the the diagonal elements whereas EFA focuses on the off-diagonal measures i.e. latent constructs that cannot be directly measured (Joliffe & Morgan, 1992).

After reviewing the descriptive statistics, the dataset was analysed using principal component analysis (PCA) with varimax rotation. PCA is a variable reduction technique that is particularly valuable when variables are highly correlated (Joliffe & Morgan, 1992). PCA reduces the number of indicator variables to a smaller number of principal components which represent the majority of the variance in the indicator variables (Joliffe & Morgan, 1992). This determines the dimensionality of underlying latent variables as PCA allows the factors to freely load and can be described as following the contours of the data. The process was used to describe the nature of the relationship between the observed variables and their latent constructs in an attempt to better understand the concept of job performance in the relevant environment (Joliffe & Morgan, 1992).

3.6.4 Correlation Analysis

Partial correlations were generated for the 24 character strengths for each of the dimensions of job performance, namely task performance, interpersonal facilitation, organisational support and job dedication, while controlling for SDR. Partial correlations are the measure of the strength and direction of a linear relationship between two variables, controlling (or partialling out) the effect of a third variable (Erb, 2020). The third variable which

was partialled out was the average social desirability score as measured by the SDS-17, to control for SDR. Partial correlations were analysed to ensure that results were statistically significant, using a p-value cut-off of $p = .05$, indicating that there is a 5% probability that the null hypothesis (there is no linear relationship) is not rejected. It is recommended that the effect size of correlations are also reported (Selya et al., 2012), as this provides a level of practical significance to complement statistical significance. Cohen (1988) provides a guideline for interpreting Pearson correlation effect size with any value between 0.1 and 0.3 considered small, between 0.3 and 0.5 considered moderate and any correlation above 0.5 considered large. The statistical significance and effect size for all relevant Pearson correlations have been reported.

3.6.5 Regression Analysis

The regression analysis included best subsets regression and multiple linear regression analysis (de Vos et al., 2011). The best subsets regression was utilised to initially reduce the number of independent variables, after which multiple regression was used to analyse the explained variance and predictive power of the best predictors of each dimension of job performance. The results of the SDS-17 were included as a predictor in the regression analyses to control for SDR. It is important to consider effect size when interpreting the results of regression analysis. Cohen (1988), once again, proposes guidelines to interpret the beta coefficients of regression analysis. Beta coefficients between 0.02 and 0.13 are considered small, between 0.13 and 0.26 is considered moderate and any coefficient higher than 0.26 is considered a large effect size. These values will be utilised as a guideline to report the results of the regression analysis.

3.6.5.1. Best Subsets Regression. Best subsets regression is an exploratory, model-building, regression analysis technique (Ruengvirayudh & Brooks, 2016). A common practical problem with regression analysis is a means to select a subset of predictors from many potential predictors (Liao et al., 2018). Therefore, the objective of best subsets regression is to reduce a considerable number of predictors to a subset of variables which meets some form of theoretical, statistical or substantive criteria (King, 2003). This was therefore particularly valuable in the context of this study with a large number of independent variables i.e., 24 character strengths.

Best subsets regression follows a procedure whereby the final, desired number of predictors is entered, and the statistical program runs all possible combinations of predictor variables to determine which combination will result in the highest R-squared, highest adjusted R-squared or the lowest Mallow's Cp statistic (D. Nel, personal communication, September 29, 2022). The statistical criterion that will be used for the purpose of this study is the highest

R-squared. Furthermore, the condition was added that the correlation coefficient between any two covariates selected should not exceed 0.7 and thus the number of covariates to select was specified in this manner (D. Nel, personal communication, September 29, 2022). This method ensures a high R-square with non-colinear covariates selected.

3.6.5.2 Multiple Regression. Four multiple regression analyses were conducted on each of the dependent variables namely task performance, organisational support, interpersonal facilitation and job dedication (de Vos et al., 2011). The independent variables were determined by the best predictors of each dependent variable. The researcher determined the best predictors by analysing the change in adjusted R-squared, in relation to the number of predictors being entered in the best subsets regression analysis. The adjusted R-squared provides a value that represents the proportion of shared variance explained by the independent variables but adjusts the value dependent on the number of predictors being entered into the analysis. The regression analysis also provided the standardised and unstandardised regression coefficients (*b*-values), statistical significance (*p*) and the proportion of shared variance (R-squared). This, respectively, informed the researcher as to the amount the dependent variable changed when there is a change in the independent variable, the probability that the null hypothesis of no relation cannot be rejected and the amount of variance in the dependent variable that the independent variables explain.

It is also important to check the results of regression analyses for heteroskedasticity (Kaufman, 2103). Heteroskedasticity is defined as a type of error variance which is not constant or where the variance of the residuals is not the same (Astivia & Zumbo, 2019; Kaufman, 2103). If heteroskedasticity is present in the regression model, this can result in the inaccurate reporting of standard errors, t-values and p-values (Kaufman, 2103). Heteroskedasticity does not affect the values of the regression coefficients or the R-squared values (Astivia & Zumbo, 2019). The multiple regression analyses were checked for heteroskedasticity using the Breusch-Pagan test (Breusch & Pagan, 1979). In cases where the test found the presence of heteroskedasticity in the regression model, the author adapted the model for heteroskedasticity by using a different method of “estimating the variance of the sample regression coefficients” (Astivia & Zumbo, 2019, p. 7).

3.7 Conclusion

The research methodology has been reported on through the specifying of the research approach, the conceptual model, the research and sampling design, the measurement instruments and the statistical analysis procedure. A quantitative, cross-sectional research design was followed, and employees completed the VIA-72, four job-performance questionnaires and the SDS-17. The dataset obtained has been analysed through the use of

PCA, correlation analysis, best subsets regression and multiple, linear regression to determine whether the presence of character strengths has the ability to influence an individual's job performance in the virtual team context.

4 Research Results and Discussion

This chapter collated the results of the statistical analysis as well as the discussion surrounding these results. The results and subsequent discussion has been split into multiple sections. Firstly, the preliminary analyses was discussed and included the item analysis, descriptive statistics and PCA. Secondly, the results of the analysis of the hypothesized character strengths and their respective job performance dimensions were presented, resulting in the retention or rejection of the relevant hypotheses. Comments were then made, in comparison to the findings of Harzer and Ruch (2014), on the replicability of these relationships within the virtual team context. Third, any relationships that were found between non-hypothesized character strengths and job performance dimensions were presented in the results, and then further discussed in line with the literature. Following this, the predictive capabilities of the character strengths were explored through regression analysis. The chapter concluded with a summary of the findings.

4.1 Preliminary Analysis

The preliminary analysis first included an analysis of all the test items and their reliabilities. Following this, descriptive statistics were presented. Any problematic items in the item analysis and descriptive statistics were discussed. Finally, the results of the PCA on the job performance instruments hav been presented and then discussed.

4.1.1 Item Analysis

Item analysis is a valuable tool for assessments as it provides information on the validity and reliability of items in a measure (Kumar et al., 2021)**.** To measure the reliability and internal consistency of the measuring instruments, the Cronbach's alphas were generated for each instrument i.e., the job performance measures, character strength (VIA-72) scales and the social desirability (SDS-17) measure. It is ideal if the Cronbach's alpha is as close to 1 as possible, however, a Cronbach's Alpha of $\alpha > .70$ is generally deemed as representing an acceptable level of reliability (Foxcroft & Roodt, 2018). Furthermore, average inter-item correlations were used to determine the internal consistency of the measure. A good internal consistency would result in an average inter-item correlation that ranges between 0.15 and 0.50 (Murphy & Davidshofer, 2014).

There are a few more statistics that are used to determine the effect of individual items on the overall measure. To measure the effect of individual items, the Cronbach's alphas, means, variances and standard deviations were generated again, with each item being removed once. This provides an indication of the effect of that item on the overall measure through the generated "if deleted" values. For e.g., in the case of internal consistency, if the

newly generated Cronbach's alpha, where one of the items was removed, was higher than the overall Cronbach's alpha with all the items included, it meant that the removed item was negatively contributing to the overall reliability of the measure. Finally, the item-total correlations measure whether the individual items are measuring an underlying construct that is similar to the overall construct being measured by all the items. Ideally, the item total correlations should be large and positive (Furr, 2011), indicating that the items and overall measure increase and decrease at a similar rate (size of correlation) and in the same direction (positive/negative). The reliability results have been analysed in relation to these aforementioned parameters.

4.1.1.1 Job Performance Dimensions. The job performance questionnaires (TPQ, JDQ, OSQ, IFQ) were analysed and discussed in terms of their reliability.

4.1.1.1.1 Task Performance Questionnaire. Table 3 contains the results of the reliability analysis on the TPQ. The measure has a Cronbach's alpha of α = .83 indicating good internal consistency. Furthermore, the average inter-item correlation is .44 which is between .15 and .50 and thus considered satisfactory. Looking at the individual items, the Cronbach's alpha consistently decreases when an individual item is deleted, indicating that all items contribute to improving the reliability of the measure. The mean, variance and standard deviation are also all satisfactory when an item is removed. Finally, the item-total correlation (ranging between .51 and .65) indicates that the items are all measuring sub-constructs which appear to correlate with the overall dimension of task performance. In conclusion, the TPQ appears to be a reliable measure of a virtual team employee's perception of their task performance.

Table 3

Reliability Analysis of TPQ

Item	Mean if deleted	Var. if deleted	Std. Dev if deleted	Item-total correlation	Alpha if deleted
TP1	9.124	7.190	2.681	0.654	0.797
TP2	9.081	7.540	2.746	0.598	0.807
TP3	9.174	7.597	2.756	0.635	0.803
TP4	8.919	7.242	2.691	0.627	0.801
TP5	9.037	7.365	2.714	0.571	0.810
TP6	8.795	6.821	2.612	0.507	0.830
TP7	9.075	7.411	2.722	0.545	0.814

Note.
Summary for scale: Mean=10.53 Std.Dv.=3.12 Valid N:161
Cronbach's alpha: .83 Standardized alpha: .84
Average inter-item correlation: .44
TP = Task Performance

4.1.1.1.2 Job Dedication Questionnaire. Table 4 illustrates the results of the reliability analysis performed on the JDQ. The JDQ possesses a reliability of α =.79. This represents acceptable, bordering on good, internal consistency. In addition, the average inter-item correlation value is .35 which is satisfactory. Looking at the Cronbach's alphas of the individual items, all the job dedication items decreased, except for JD5. Due to the high overall reliability of the measure, it was decided to not remove the item. JD5 was also the standout variable with regard to item-total correlations, with a correlation lower than the rest of the items. However, once again the average inter-item correlation is still acceptable and therefore the item will not be removed. Finally, the mean, variance and standard deviation "if deleted" values pose no concern and appear to be acceptable. In conclusion, JD5 appears to be a potentially problematic item. It is recommended that in future uses of the JDQ the item be omitted. However, due to the high overall reliability, it will remain for the purpose of this study.

Table 4

Reliability Analysis of JDQ

Item	Mean if deleted	Var. if deleted	Std. Dev if deleted	Item-total correlation	Alpha if deleted
JD1	13.565	13.823	3.718	0.489	0.775
JD2	13.845	15.659	3.957	0.466	0.776
JD3	13.447	13.204	3.634	0.647	0.744
JD4	13.826	15.137	3.891	0.539	0.766
JD5	12.590	14.515	3.810	0.348	0.806
JD6	13.913	14.787	3.845	0.629	0.755
JD7	13.863	15.671	3.959	0.515	0.772
JD8	13.516	14.871	3.856	0.525	0.767

Note.
Summary for scale: Mean=15.51 Std.Dv.=4.33 Valid N:161
Cronbach's alpha: .79 Standardized alpha: .81
Average inter-item corr.: .35
JD = Job Dedication

4.1.1.1.3 Organisational Support Questionnaire. Table 5 contains the results of the reliability analysis performed on the OSQ. The measure appears to possess a satisfactory level of internal consistency with a Cronbach's alpha of α=.76. The OSQ also possesses an average inter-item correlation of .32 which is between the acceptable values of .15 and .50. The individual items of OS5 and OS6 were potentially problematic with relatively low item-total correlations and a Cronbach's alpha that increased when the items were deleted. Once again, the overall reliability is satisfactory and therefore the items will not be removed from the measure, however it may be better to remove these two items for future analyses. The remaining item-total correlations are satisfactory as are the mean, variance and standard deviation if deleted values. Therefore, the OSQ appears to be a reliable measure of an individual's perception of their support for the organisation.

Table 5

Reliability Analysis of OSQ

Item	Mean if deleted	Var. if deleted	Std. Dev if deleted	Item-total correlation	Alpha if deleted
OS1	13.056	10.575	3.252	0.640	0.700
OS2	13.217	10.506	3.241	0.660	0.696
OS3	13.112	10.447	3.232	0.533	0.714
OS4	13.273	11.627	3.410	0.414	0.737
OS5	13.043	11.532	3.396	0.249	0.771
OS6	12.161	11.017	3.319	0.261	0.779
OS7	13.106	10.641	3.262	0.577	0.708
OS8	13.075	11.026	3.320	0.479	0.725

Note.
Summary for scale: Mean=14.86 Std.Dv.=3.72 Valid N:161
Cronbach's alpha: .76 Standardized alpha: .78
Average inter-item corr.: .32
OS = Organisational Support

4.1.1.1.4 Interpersonal Facilitation Questionnaire. Table 6 comprises the reliability analysis of the IFQ. The Cronbach's alpha value of α =.78 indicates that the IFQ possesses a satisfactory level of internal consistency. The average inter-item correlation reinforces this notion with a value of .35 which falls within the satisfactory range. Analysis of the individual items resulted in no problematic items being detected with all the item-total correlations being positive and large. Furthermore, the alpha if deleted values indicated the overall Cronbach's alpha would always decrease if any of the items were removed. The mean, variance and standard deviation if deleted values also did not raise any issues. Therefore, it appears as if the IFQ is a reliable measure of a virtual team member's perception of their level of interpersonal facilitation.

Table 6

Reliability Analysis of IFQ

Item	Mean if deleted	Var. if deleted	Std. Dev if deleted	Item-total correlation	Alpha if deleted
IF1	10.093	8.830	2.972	0.558	0.742
IF2	9.497	7.480	2.735	0.520	0.758
IF3	9.938	9.437	3.072	0.430	0.765
IF4	9.789	8.440	2.905	0.606	0.731
IF5	9.596	7.483	2.736	0.605	0.730
IF6	10.199	9.923	3.150	0.438	0.767
IF7	10.056	9.419	3.069	0.462	0.760

Note.
Summary for scale: Mean=11.5280 Std.Dv.=3.39312 Valid N:161
Cronbach's alpha: .78 Standardized alpha: .79
Average inter-item corr.: .35
IF = Interpersonal Facilitation

4.1.1.2 Character Strength Scales. Appendix D contains the results of the reliability analysis on all 24 character strength sub-scales. The reliabilities of the character strength scales were lower than the researcher would prefer, with several scales being below the recommended desirable internal consistency level of α > .70 (Foxcroft & Roodt, 2018). However, other authors have suggested α > .60 as a minimum reliability value (Fleiss et al., 2013; Shrout, 1998). Furthermore, Streiner (2003) states that a high value of α does not always equate to a high degree of internal consistency and this is due to the fact that Cronbach's alpha is directly and strongly affected by the length of the scale. This was also empirically demonstrated (Cortina, 1993). Considering the VIA-72 consists of only 3 items per scale due to the overall length of the questionnaire, it is therefore acceptable that the Cronbach's alphas would be lower than the acceptable level of internal consistency.

Another explanation for the low internal consistency is that character strengths were specifically intended to be multidimensional by the authors of the VIA classification (McGrath & Wallace, 2021; Peterson & Seligman, 2004). It has been found that Cronbach's alpha tends to underestimate the reliability of multidimensional scales (McNeish, 2018). It is therefore apparent that there are multiple explanations for the low reliability scores with regard to character strengths.

10 of the 24 character strength scales were found to have a Cronbach's alpha of α < .70, but α >.60. Certain character strengths scales were closer to .70 but there were a few scales that possessed a Cronbach's alpha of α < .65 namely curiosity, fairness, forgiveness, humility, kindness and leadership. Therefore, despite the possible explanation for low levels of internal consistency, any results involving these character strengths should be interpreted with a certain degree of caution.

Certain character strength scales also possess inter-item correlations that are higher than the recommended .50 value. Humour, Perseverance, Spirituality and Zest possessed inter-item correlations above .60, indicating that some of the items in the scale are very similar, if not redundant (Furr, 2011). Humour possesses the highest inter-item correlation with .77 and therefore any findings regarding this character strength should once again be interpreted with caution.

4.1.1.3 Social Desirability Scale (SDS-17). Table 7 contains the results of the reliability analysis on the SDS-17. The Cronbach's alpha of α =.68 suggests that the internal consistency of the measure is slightly lower than the acceptable Cronbach's alpha of α =.70 (Foxcroft & Roodt, 2018). Furthermore, the average inter-item correlation value of .12 is on the border of the acceptable range of 0.1 (Murphy & Davidshofer, 2014). Low reliabilities in SDR measures are not uncommon as Odendaal et al. (2016) found that a number of SDR

scales presented unsatisfactory psychometric properties, in a South African context. Specifically, the authors found low reliability coefficients across language and race groups. Therefore, considering the use of the SDS-17 as a control variable, the reliability is deemed acceptable for use.

Table 7

Reliability Analysis for SDS-17

Item	Mean if deleted	Var. if deleted	Std. Dev if deleted	Item-total correlation	Alpha if deleted
SD1	9.205	8.101	2.846	0.236	0.676
SD2	9.261	8.044	2.836	0.210	0.678
SD3	9.559	7.911	2.813	0.170	0.686
SD4	9.422	7.474	2.734	0.365	0.660
SD5	9.627	7.339	2.709	0.389	0.656
SD6	9.553	7.179	2.679	0.453	0.647
SD7	9.478	7.541	2.746	0.320	0.665
SD8	9.217	8.195	2.863	0.171	0.681
SD9	9.273	7.975	2.824	0.233	0.676
SD10	9.752	7.541	2.746	0.337	0.663
SD11	9.236	8.143	2.854	0.181	0.681
SD12	9.366	7.549	2.748	0.360	0.661
SD13	9.503	7.306	2.703	0.409	0.653
SD14	9.658	7.728	2.780	0.242	0.676
SD15	9.882	8.290	2.879	0.080	0.692
SD16	9.311	7.717	2.778	0.323	0.666

Note.
Summary for scale: Mean=10.09 Std.Dv.=2.95 Valid N:161
Cronbach's alpha: .68 Standardized alpha: .68
Average inter-item corr.: .12
SD = Social Desirability

4.1.2 Descriptive Statistics

The descriptive statistics are presented in Table 8. The table contains the means, medians, standard deviations and minimum and maximum values of all the variables. There appear to be no values that cause concern.

Table 8

Descriptive Statistics for all Variables (n = 161)

Variable	Mean	Median	Minimum	Maximum	Std Dev.
Dependent Variables					
TP	1.505	1.429	1.000	2.714	0.446
JD	1.939	1.875	1.000	3.375	0.542
OS	1.858	1.875	1.000	3.375	0.466
IF	1.647	1.571	1.000	3.143	0.485
Independent Variables					
AB	2.019	2.000	1.000	5.000	0.761
B	2.064	2.000	1.000	5.000	0.657
C	2.168	2.333	1.000	4.667	0.707
CU	2.118	2.000	1.000	3.667	0.601
FA	1.652	1.667	1.000	4.000	0.549
F	2.230	2.333	1.000	4.000	0.709
G	1.896	2.000	1.000	5.000	0.687
H	1.671	1.667	1.000	4.667	0.585
HO	1.936	2.000	1.000	5.000	0.689
HU	2.329	2.333	1.000	4.333	0.753
HM	1.983	2.000	1.000	5.000	0.776
J	1.716	1.667	1.000	3.667	0.602
K	1.787	1.667	1.000	3.667	0.603
LE	1.905	1.667	1.000	3.667	0.606
L	1.805	1.667	1.000	4.667	0.686
LL	2.472	2.333	1.000	4.333	0.810
P	1.863	2.000	1.000	4.000	0.652
PE	2.155	2.000	1.000	4.000	0.661
PR	2.159	2.000	1.000	4.333	0.754
SR	2.936	3.000	1.000	5.000	0.830
SI	2.104	2.000	1.000	5.000	0.669
S	2.928	2.667	1.000	5.000	1.280
TW	1.950	2.000	1.000	4.000	0.625
Z	2.509	2.333	1.000	5.000	0.822
Social Desirability					
SD	0.630	0.688	0.125	1.000	0.184

Note.
n = 161
AB = appreciation of beauty and excellence; B = bravery; C = creativity; CU = curiosity; FA = fairness; F = forgiveness; G = gratitude; H = honesty; HO = hope; HU = humility; HM = humour; J = judgement; K = kindness; LE = leadership; L = love; LL = love of learning; P = perseverance; PE = perspective; PR = prudence; SR = self-regulation; SI = social intelligence; S = spirituality; TW = teamwork; Z = zest; SD = social desirability; TP = task performance; JD = job dedication; OS = organisational support; IF = interpersonal facilitation

4.1.3 Principal Component Analysis of Job Performance Dimensions

Principal component analysis (PCA) was employed to ensure that the underlying factors were loading on the correct measures, thus providing the necessary discriminant and convergent validity. This would ensure that correct constructs were being measured and that the different measures were measuring distinct job performance dimensions. Table 9 shows the results of the PCA with varimax normalised rotations on the job performance dimensions.

The results indicate a distinct four-factor structure which mirrors the four dimensions of job performance (Harzer & Ruch, 2014). Each factor has a factor loading above .90 on only one of the dimensions, indicating that each factor represents one of the dimensions of job performance. Furthermore, the task performance and contextual performance structure was evident. Task performance had lower factor loadings on the contextual performance factors compared to the factor loadings of the three contextual performance variables on their two contextual performance counterparts.

The arguable exception to this structure was job dedication, which loaded highest on task performance out of the other two variables, likely because if one performs their daily tasks to a high standard (indicative of high task performance) they are likely displaying job dedication and vice versa. Therefore, it is evident that the job performance measures possess the necessary convergent and discriminant validity, by loading on the factors they should and shouldn't, to be considered valid and reliable measures of the four job performance dimensions.

Table 9

PCA on Job Performance Dimensions

Variable	Factor loading			
	1	2	3	4
TP	0.074	0.956	0.142	0.244
JD	0.243	0.275	0.157	0.917
OS	0.947	0.076	0.218	0.223
IF	0.213	0.143	0.956	0.143

Note.
Factor Loadings (Varimax normalized)
Extraction: Principal components
TP = task performance; JD = job dedication; OS = organisational support; IF = interpersonal facilitation

4.2 Evaluation of the Hypothesized Relationships

The first objective of this study was to examine the relationship between each of the 11 identified highest correlating character strengths, according to Harzer and Ruch (2014), with their respective dimension of individual job performance. This resulted in the formation of the 18 operational hypotheses. The validity of these hypotheses will be evaluated by reporting the results of the correlation analysis. The discussion of the hypothesized relationships will immediately follow the reporting of each result. Since it is difficult to directly compare the effect size of correlations i.e., between this study and the results of Harzer and Ruch, the character strengths have been ranked and compared according to their rank order in each study.

4.2.1 Correlation Analysis for Replicability in Virtual Teams

Table 10 contains the results of the partial correlations between the 11 hypothesized character strengths and the four dimensions of job performance while controlling for SDR. The majority of partial correlations were statistically significant (p<.05). The statistically non-significant values have been marked with an asterisk. The Spearman correlations have also been included in Appendix E for the sake of comparison.

Table 10

Partial Pearson correlations between 11 hypothesized character strengths and four job performance dimensions

Character Strength	TP	IF	OS	JD
Bravery	0.190	0.283	0.243	0.288
Curiosity	0.129*	0.264	0.293	0.334
Fairness	0.340	0.354	0.269	0.259
Honesty	0.491	0.269	0.233	0.427
Kindness	0.213	0.585	0.276	0.146*
Leadership	0.277	0.546	0.381	0.301
Love of Learning	0.118*	0.173	0.054*	0.106*
Perseverance	0.482	0.243	0.321	0.572
Prudence	0.198	0.178	0.070*	0.227
Self-regulation	0.152*	0.015*	0.043*	0.194
Teamwork	0.191	0.363	0.361	0.289

Note.
* = Non-significant p-value (p >.05)
n = 161

4.2.1.1 Task Performance

Hypothesis 1a: *The character strength of perseverance positively correlates with self-rated individual task performance in virtual teams.*

The hypothesized relationship between perseverance and task performance was found to be **statistically significant** (p <.001). The correlation between perseverance and task performance was also found to be positive, indicating that the variables trend in the same direction. Therefore, the null hypothesis of no relation is rejected and hypothesis 1a is **retained**. Furthermore, it appears that there is a moderate to large Pearson correlation (r (159) = .489, p <.001) between the two variables, indicating that there is a sizable association between a virtual team member's level of perseverance and their task performance.

This finding is conceptually expected considering the definitions of perseverance and task performance. Perseverance is the "continuation of a goal-directed action in spite of obstacles, difficulties, or discouragement" (Peterson & Seligman, 2004, p. 229) and therefore it is expected that individuals who possess this strength will perform their daily tasks to a higher standard and vice versa. This finding is also in line with the literature as perseverance was found to be critical in the performance domain of virtual teams (Duarte & Snyder, 2001, as cited in Krumm et al., 2016). Therefore, it appears as if this finding of Harzer and Ruch (2014) is replicable in a virtual team context.

Hypothesis 1b: *The character strength of honesty positively correlates with self-rated individual task performance in virtual teams.*

The hypothesized relationship between honesty and task performance was found to be **statistically significant** (p <.001). The relationship between honesty and task performance was positive, indicating that the variables are likely to increase or decrease in the same direction. Therefore, the null hypothesis of no relation is rejected and hypothesis 1b is **retained**. Furthermore, there is a moderate to large Pearson correlation (r (159) = .491, p <.001) between the two variables, indicating that there is a large association between a virtual team member's self-perceived level of honesty and their task performance. Honesty is the highest correlating character strength with task performance.

The relationship between honesty and task performance (Harzer & Ruch, 2014) is therefore replicable in a virtual team context. Harzer and Ruch theorised that honesty was consistently associated with task performance due to the fact that individuals who act sincerely or in an honest manner are more likely to be compelled to complete all their tasks and achieve all the outcomes required of them. It appears as if the same is true in a virtual team context, but the strength of the relationship appears to indicate that honesty in a virtual team context

may be even more important for task performance. This may be due to the lack of supervision in a virtual setting, requiring virtual team members to employ honesty more often when completing required tasks. This notion is supported by Fuller et al. (2012) who found that task performance was negatively affected by deception in virtual teams. Other virtual team members were able to identify dishonesty which subsequently decreased trust and mutuality between team members. The strength of the relationship between honesty and task performance in virtual teams is therefore credible.

Hypothesis 1c: *The character strength of teamwork positively correlates with self-rated individual task performance in virtual teams.*

The hypothesized relationship between teamwork and task performance was found to be **statistically significant** (p <.05). The relationship between teamwork and task performance was positive, indicating that the independent and dependent variables are likely to trend in the same direction. Therefore, the null hypothesis of no relation is rejected and hypothesis 1c is **retained**. However, the effect size of the Pearson value (r (159) = .191, p <.05) is small, therefore indicating a relatively weak linear relationship between an individual's propensity for teamwork and task performance in a virtual team.

This finding somewhat contradicts the findings of Harzer and Ruch (2014). The positive and statistically significant Pearson r indicates that teamwork and task performance are associated in a virtual team context. However, the strength of the relationship is dissimilar to the findings of Harzer and Ruch in that teamwork was one of the highest correlating character strengths whereas, in a virtual team context, it appears to be one of the lowest correlating character strengths with task performance.

As mentioned in chapter 2, this finding is partly explained by Mihhailova (2009), who found that virtual team members may struggle to develop a teamwork orientation or may not possess it at all. Mihhailova postulates that this may be due to the nature of dispersed teams, in that virtual team members often spend time alone and may not be required to work in a traditional team environment. Furthermore, Williams and Castro (2010) found that an individual's level of teamwork orientation is higher in face-to-face teams than in virtual teams. This was empirically proven by Krumm et al. (2016), who found that teamwork-related knowledge, skills, abilities and other characteristics (KSAOs) may be less significant in a virtual team context. The finding of this study, therefore, adds weight to the argument that in a virtual team context, an individual's propensity for teamwork is not as important for task performance compared to a traditional work setting.

Hypothesis 1d: *The character strength of prudence positively correlates with self-rated individual task performance in virtual teams.*

The hypothesized relationship between prudence and task performance was found to be **statistically significant** (p <.05). The variables are likely to increase or decrease in the same direction as the relationship between prudence and task performance was positive. Therefore, the null hypothesis of no relation is rejected and hypothesis 1d is **retained**. However, once again the size of the Pearson correlation (r (159) = .198, p <.05) is small, indicating a relatively weak linear relationship between prudence and task performance in a virtual team.

Conceptually, it is expected that prudence would be positively correlated with task performance in a virtual team context. Peterson and Seligman (2004, p. 478) defined prudence as “a cognitive orientation to the personal future, a form of practical reasoning and self-management that helps to achieve the individual’s long-term goals effectively”. Therefore, it is likely that prudent individuals would complete the core tasks required of them in a work setting, leading to higher task performance, as not competently performing their role may result in an adverse outcome in the future which prudent individuals actively attempt to avoid.

Hypothesis 1e*: The character strength of self-regulation positively correlates with self-rated individual task performance in virtual teams.*

The hypothesized relationship between self-regulation and task performance was found to be **statistically non-significant** (p >.05). Therefore, the null hypothesis of no relation is retained and hypothesis 1e is **rejected**. Even though the p-value was close to the cut-off mark of .05 (p = .055), the Pearson (r (159) = .15, p >.05) value indicated a weak, linear relationship between self-regulation and task performance.

This finding directly contradicts the results of Harzer and Ruch (2014), who found a statistically significant relationship between self-regulation and task performance. Furthermore, Harzer and Ruch found self-regulation to be one of the highest correlating character strengths with task performance whereas it appears as if in virtual teams self-regulation is one of the non-significant, lowest correlating character strengths.

The definition of self-regulation is “how a person exerts control over his or her own responses” with responses including “thoughts, emotions, impulses, performances, and other behaviours” (Peterson & Seligman, 2004, p. 500). The author of this study proposes that the nature of a virtual team employee’s work environment may be one of the reasons for this unexpected finding. Certain virtual teams or remote working setups may allow employees more autonomy over their workday. Some virtual employees may be able to engage in leisure

activities during work hours and then catch up on tasks at a more suitable time. Therefore, it is plausible that less self-regulation is required from employees (to regulate thoughts, emotions and behaviours) when performing tasks in a virtual environment. However, Ferreira et al. (2021) and Blackburn et al. (2003) found that the virtual work environment may require more self-regulation from employees as they have more autonomy and thus have to manage their own work pace. This finding is therefore contrary to expectations and a further explanation is proposed under the discussion of hypothesis 3d.

4.2.1.2 Interpersonal Facilitation

Hypothesis 2a: *The character strength of teamwork positively correlates with self-rated individual interpersonal facilitation in virtual teams.*

The hypothesized relationship between teamwork and interpersonal facilitation was found to be **statistically significant** (p <.001). The relationship between teamwork and interpersonal facilitation was positive, indicating that the independent and dependent variables are likely to trend in the same direction. Therefore, the null hypothesis of no relation is rejected and hypothesis 2a is **retained**. In relation to interpersonal facilitation, teamwork was the fourth highest correlating character strength with a moderate Pearson correlation (r (159) = .363, p <.001). Therefore, there is a moderate, linear relationship between teamwork and interpersonal facilitation in virtual teams.

This aligns with the findings of Harzer and Ruch (2014) in that teamwork behaviours such as loyalty to the group, helping and cooperating conceptually overlap with the definition of interpersonal facilitation. This finding is also supported by other authors who postulate that the presence of teamwork-related characteristics in virtual team employees is more likely to lead to interpersonal helping and better relationships (Cameron & Sosik, 2016; Sosik & Zhu, 2020). It is therefore conceptually and empirically clear that an individual's propensity for teamwork is consistently associated with interpersonal facilitation in virtual teams.

Hypothesis 2b: *The character strength of leadership positively correlates with self-rated individual interpersonal facilitation in virtual teams.*

The hypothesized relationship between leadership and interpersonal facilitation was found to be **statistically significant** (p <.001). The relationship between leadership and interpersonal facilitation was also positive, meaning that leadership and interpersonal facilitation should trend in the same direction. Therefore, the null hypothesis of no relation is rejected and hypothesis 2b is **retained**. Leadership possessed a large Pearson correlation (r (159) = .546, p <.001) and therefore a strong, linear relationship is present. Furthermore, leadership was the second highest correlating character strength. However, despite the

strength of the relationship, any results including the character strength of leadership should be interpreted with caution due to the low Cronbach's alpha.

This finding is in line with that of Harzer and Ruch (2014) who found a significant and positive relationship between leadership and interpersonal facilitation in a non-virtual setting. In a virtual context, Tyran et al. (2003), found that motivating and inspiring leaders are more likely to individually motivate employees through a virtual medium. Considering interpersonal facilitation is defined as an attitude orientated around willingness to help, motivate or cooperate (Van Scotter & Motowidlo, 1996), the finding that leadership highly correlates with interpersonal facilitation in virtual teams is theoretically and conceptually sound.

Hypothesis 2c: *The character strength of fairness positively correlates with self-rated individual interpersonal facilitation in virtual teams.*

The hypothesized relationship between fairness and interpersonal facilitation was found to be **statistically significant** (p <.001). Fairness and interpersonal facilitation possess a positive relationship indicating the two variables should increase and decrease in the same direction. Therefore, the null hypothesis of no relation is rejected and hypothesis 2c is **retained**. The Pearson correlation (r (159) = .354, p <.001) signifies a moderate, linear relationship between fairness and interpersonal facilitation. Fairness was the fifth highest correlating character strength with interpersonal facilitation in a virtual team context.

The relationship between fairness and interpersonal facilitation found by Harzer and Ruch (2014) appears to be replicable in a virtual team context. This finding is supported by Reilly and Aronson (2009), who found that actions such as operating and assisting team members, which speak to the definition of interpersonal facilitation, are even more important in virtual teams. The authors theorise that the presence of fair and equitable treatment increases the frequency of these helping behaviours. Furthermore, Aryee et al. (2004), found that at an organisational level, fairness is related to interpersonal facilitation. Qiu et al. (2009), also found that a higher level of interactional fairness resulted in a higher quality of interpersonal relationships between individuals. Therefore, the literature appears to provide support for the relationship between fairness and interpersonal facilitation in a virtual team context.

Hypothesis 2d: *The character strength of kindness positively correlates with self-rated individual interpersonal facilitation in virtual teams.*

The hypothesized relationship between kindness and interpersonal facilitation was found to be **statistically significant** (p <.001). Kindness and interpersonal facilitation possess a positive relationship, indicating that the variables should move in the same direction.

Therefore, the null hypothesis of no relation is rejected and hypothesis 2d is **retained**. Kindness possessed a large Pearson correlation (r (159) = .585, p <.001) and therefore a strong, linear relationship is present. Kindness was the highest correlating character strength with interpersonal facilitation.

Harzer and Ruch (2014) also found that kindness was one of the highest correlating character strengths with interpersonal facilitation. It was expected that due to the conceptual overlap between kindness and interpersonal facilitation that there was going to be a strong correlation. Kindness is “a common orientation of the self toward the other” (Peterson & Seligman, 2004, p. 326) and therefore it is unsurprising that a positive, significant relationship was found. However, the strength of the relationship in virtual teams appears to be stronger than in a normal work environment (Harzer & Ruch, 2014) in terms of the rank order of the character strengths. The author of this study thus theorises that in a virtual team, the barriers to interpersonal facilitation are higher due to the virtual medium used for communication. It may be more difficult for employees to display an attitude of helping, motivate other employees, or just act considerately when all actions must pass through a virtual medium. Therefore, the higher an employee's level of kindness in a virtual team the more likely they are to overcome these barriers to help, assist or act considerately towards their colleagues, thus displaying interpersonal facilitation and vice versa.

4.2.1.3 Organisational Support

Hypothesis 3a: *The character strength of perseverance positively correlates with self-rated individual organisational support in virtual teams.*

The hypothesized relationship between perseverance and organisational support was found to be **statistically significant** (p <.001). The relationship between perseverance and organisational support was positive, indicating that the variables are likely to increase or decrease in the same direction. Therefore, the null hypothesis of no relation is rejected and hypothesis 3a is **retained**. There is a moderate Pearson correlation (r (159) = .322, p <.001) between the two variables, indicating a moderate, linear relationship between a virtual team member’s self-perceived level of perseverance and their organisational support.

Harzer and Ruch (2014) found that in a normal work environment perseverance was the highest correlating character strength with organisational support. In a virtual context, the relationship makes conceptual sense as an important aspect of organisational support is loyalty to the organisation despite temporary hardships and the toleration of occasional difficulties and adversity (Borman et al., 2001; Coleman & Borman, 2000), with which perseverance would naturally overlap. Chapter 2 found that there are numerous difficulties and challenges associated with virtual work (Gibson & Cohen, 2003), and therefore it is

plausible that perseverance would be associated with this dimension of job performance. Furthermore, the strength of the relationship in virtual teams is similar to the findings of Harzer and Ruch (2014). Therefore, it can be concluded that the association between perseverance and organisational support is replicable in a virtual team context.

Hypothesis 3b: *The character strength of kindness positively correlates with self-rated individual organisational support in virtual teams.*

The hypothesized relationship between kindness and organisational support was found to be **statistically significant** (p <.001) and positive. Therefore, the null hypothesis of no relation is rejected and hypothesis 3b is **retained**. There is a small, bordering on moderate, Pearson correlation (r (159) = .276, p <.001) between kindness and organisational support, which signifies the presence of a relatively weak, linear relationship between the variables in a virtual team context.

Kindness appears to be marginally less important to organisational support in a virtual team environment compared to the results of Harzer and Ruch (2014). The authors found kindness to be the second highest correlating character strength with a moderate relationship with organisational support. The results of this study indicate that, in a virtual team context, kindness is not one of the highest correlating character strengths with a relatively weak relationship. However, it still makes sense that kindness and organisational support are associated in virtual team employees. The character strength, kindness as “a common orientation of the self toward the other” (Peterson & Seligman, 2004, p. 326) is still likely to be related to virtual employees engaging in the three organisational support actions of representation, loyalty and compliance (Borman et al., 2001) as these require one to think past the interests of one’s self.

Hypothesis 3c: *The character strength of teamwork positively correlates with self-rated individual organisational support in virtual teams.*

The hypothesized relationship between teamwork and organisational support was found to be **statistically significant** (p <.001). Furthermore, the relationship between teamwork and organisational support was found to be positive resulting in the null hypothesis of no relation being rejected and hypothesis 3c being **retained**. Teamwork and organisational support possessed a moderate Pearson correlation (r (159) = .361, p <.001) indicating a moderate, linear relationship. Furthermore, teamwork was found to be the sixth highest correlating character strength with organisational support in a virtual team context.

This finding replicates the normal-work environment findings of Harzer and Ruch (2014) in a virtual team context. The authors theorised that teamwork is associated with

organisational support due to the definition of organisational support including aspects such as loyalty and compliance, which are also inherent characteristics of teamwork (Borman et al., 2001; Peterson & Seligman, 2004). The same theory appears to be true in a virtual team context with the presence of a moderate, statistically significant, positive relationship.

Hypothesis 3d: *The character strength of self-regulation positively correlates with self-rated individual organisational support in virtual teams.*

The hypothesized relationship between self-regulation and organisational support was found to be **statistically non-significant** ($p > .05$). Therefore, the null hypothesis of no relation is retained and hypothesis 3d is **rejected**. Self-regulation and organisational support possessed an almost non-existent Pearson correlation (r (159) = .043, $p > .05$) indicating no linear relationship is present between the variables in a virtual team context.

The aforementioned finding directly contradicts the results of Harzer and Ruch (2014), who found that self-regulation did not only possess a moderate, significant relationship but was one of the highest correlating character strengths with organisational support. Therefore, it appears as if the relationship between self-regulation and organisational support is not replicable in a virtual team context.

This result is contrary to expectations as the definition of self-regulation is “how a person exerts control over his or her own responses so as to pursue goals and live up to standards” (Peterson & Seligman, 2004, p. 500). It would be expected that, even in a virtual environment, self-regulation would be associated with organisational support as an employee should have to exert control over their responses to maintain the three subdimensions of organisational support i.e. loyalty, compliance and representation (Borman et al., 2001). Further research is therefore required to elaborate on this finding.

A possible explanation for this unexpected finding is the scale itself used to measure the construct. The VIA-72 was derived from the VIA-120 by taking the three most internally consistent items from each scale (*VIA-72*, 2020). The scale only had a Cronbach’s alpha of α = .68, which is considered average. Looking specifically at the items, two of the items relate to the consumption of food namely “Even when candy or cookies are under my nose, I never overeat” and “I can always stay on a diet”. It is therefore plausible that the self-regulation scale in the VIA-72 is not accurately measuring the construct according to the conceptual definition proposed by Peterson and Seligman (2004). The scale could be tapping a construct indicative of an individual’s eating habits as opposed to their self-regulation in all daily activities. It is recommended that this scale is further analysed in future research.

4.2.1.4 Job Dedication

Hypothesis 4a: *The character strength of bravery positively correlates with self-rated individual job dedication in virtual teams.*

The hypothesized relationship between bravery and job dedication was found to be **statistically significant** (p <.001). The relationship between the two variables was also found to be positive, resulting in the null hypothesis of no relation being rejected and hypothesis 4a being **retained**. Bravery and job dedication possessed a small Pearson correlation (r (159) = .288, p <.001) indicating a weak, linear relationship.

It has been found that working in a virtual team can pose significantly more challenges than working in an in-person environment, specifically in areas such as problem-solving or task completion (Beer et al., 1984; Garloch et al., 1997; Hambley et al., 2007). Bravery requires an act of judgement i.e., an acknowledgement of risk and thus an acceptance of the potential consequences (Peterson & Seligman, 2004). Virtual team employees are required, on a daily basis, to accept the challenges associated with working in a virtual environment as opposed to a traditional work setting. Furthermore, to be dedicated to one's job requires putting one's self forward and taking on challenging tasks or assignments (Van Scotter & Motowidlo, 1996). This may be even more difficult in a virtual team context where immediate assistance from co-workers may not be available. Naturally, bravery is thus associated with job dedication in virtual teams.

Hypothesis 4b: *The character strength of perseverance positively correlates with self-rated individual job dedication in virtual teams.*

The hypothesized relationship between perseverance and job dedication was found to be **statistically significant** (p <.001). The relationship between the two variables was also found to be positive, indicating the variables trend in the same direction. Therefore, the null hypothesis of no relation is rejected and hypothesis 4b is **retained**. Perseverance and job dedication unsurprisingly possessed a large Pearson correlation (r (159) = .572, p <.001) indicating a strong, linear relationship between the variables.

The relationship between perseverance and job dedication found in a traditional work setting (Harzer & Ruch, 2014) was expected to be replicable in virtual teams. Perseverance is the "continuation of a goal-directed action in spite of obstacles, difficulties, or discouragement" (Peterson & Seligman, 2004, p. 229). Considering an important aspect of job dedication is the taking on of difficult or complex tasks, it makes conceptual sense that a strong relationship would be present between the two variables.

Hypothesis 4c: *The character strength of curiosity positively correlates with self-rated individual job dedication in virtual teams.*

The hypothesized relationship between curiosity and job dedication was found to be **statistically significant** (p <.001). Curiosity and job dedication possess a positive relationship, indicating the variables increase and decrease in the same direction. Therefore, the null hypothesis of no relation is rejected and hypothesis 4c is **retained**. The strength of the relationship between the two variables was represented by a moderate Pearson correlation (r (159) = .334, p <.001) which indicates the presence of a moderate linear relationship between curiosity and job dedication.

The finding is in line with the results of Harzer and Ruch (2014), thereby indicating that the positive, significant relationship between curiosity and job dedication in a normal work environment is replicable in a virtual team context. This is also supported by further literature with Gibson and Cohen (2003) stating that since technology can be difficult to navigate, a curious nature can be beneficial. This is especially true in relation to job dedication, as a crucial facet of job dedication is taking on difficult tasks. Therefore, a curious individual will be more likely to learn new technology, take on difficult tasks in a challenging virtual environment and thus display job dedication.

Hypothesis 4d: *The character strength of self-regulation positively correlates with self-rated individual job dedication in virtual teams.*

The hypothesized relationship between self-regulation and job dedication was found to be **statistically significant** (p <.05). Furthermore, the two variables possessed a positive relationship and thus the null hypothesis of no relation is rejected and hypothesis 4d is **retained**. Self-regulation and job dedication possessed a small Pearson correlation (r (159) = .194, p <.05) indicating a relatively weak, linear relationship between the variables.

Harzer and Ruch (2014) found self-regulation to be one of the highest correlating character strengths with job dedication. Contrastingly, self-regulation is one of the lowest correlating character strengths with job dedication in a virtual environment. A possible explanation for this finding could be the aforementioned concerns regarding the self-regulation scale. Another explanation, that has already been mentioned, is the nature of the virtual environment. Employees often have more autonomy working from home and therefore need not regulate their thoughts, feelings and behaviours as frequently. Despite this, the relationship between self-regulation and job dedication is still significant and positive as employees displaying job dedication through self-disciplined, motivated acts are still going to have to regulate their emotions, feelings and behaviours to an extent. However, it still appears that in

a virtual team context the association between self-regulation and job dedication is not as strong.

Hypothesis 4e: *The character strength of love of learning positively correlates with self-rated individual job dedication in virtual teams.*

The hypothesized relationship between love of learning and job dedication was found to be **statistically non-significant** (p >.05). Even though the relationship between the variables was positive, hypothesis 4e must be **rejected** and the null hypothesis of no relation is retained. Love of learning and job dedication possessed a very small Pearson correlation (r (159) = .106, p >.05) indicating a weak, linear relationship is present between the variables in a virtual team context.

This result was unexpected as Harzer and Ruch (2014) found a significant relationship between love and learning and job dedication. Furthermore, hypothesis 4c was retained with curiosity being positively related to job dedication, and thus one would thus expect the conceptually similar character strength, love of learning, to also possess a positive, significant relationship. The literature also contradicted this finding, as Gibson and Cohen (2003) state that a love of learning orientation is crucial to the success of virtual teams. Gibson and Cohen go on to say that the presence of a learning orientation within virtual team members can encourage knowledge-sharing, inter-member learning, working off other team members as well as the provision of constructive and rich feedback. These activities directly align with the definition of job dedication. Therefore, the researcher of this study attributes the reason for this finding to the individual items used to measure love of learning as a character strength.

There are many different ways for learning to take place in this modern age. YouTube (specifically educational videos or tutorials) and online learning platforms have millions of users every day consuming content to learn a skill or educate themselves (O'Neil-Hart, 2017). Furthermore, the rise of podcasts also provides a new way in which knowledge can be learned. The love of learning scale contained two items (out of three) which specifically related to the reading of books. The researcher argues that this may not be the way that many people consume knowledge anymore, especially individuals who are comfortable in virtual teams and therefore possess a certain level of technological capabilities. Therefore, the love of learning scale on the VIA-72 may be outdated and require analysis and revision to accurately measure the construct of "love of learning" in this modern, technologically savvy society.

4.3 Evaluation of Non-hypothesized Relationships

The association between the hypothesized character strengths and their relevant dimension of job performance have been discussed, resulting in the rejection or retention of

the hypotheses. This satisfies the first objective of the study by analysing the replicability of the results, as found by Harzer and Ruch (2014), in a virtual team context. The correlation analysis, however, revealed that there were other character strengths which correlated highly with certain dimensions of job performance, unique to the findings of Harzer and Ruch. These highly correlating character strengths will be discussed, to satisfy the second objective of this research study, by reporting on the results and then discussing the merit of the association.

4.3.1 Correlation Analysis for Non-hypothesized Variables in Virtual Teams

Table 11 outlines the partial Pearson correlations between the 24-character strengths and four dimensions of job performance while controlling for SDR. The statistically non-significant values have been marked with an asterisk. The reporting on these correlations and subsequent discussions are outlined in the following sections.

Table 11

Partial Pearson correlations between 24 character strengths and four job performance dimensions

Character Strength	TP	IF	OS	JD
Appreciation of Beauty and Excellence	0.199	0.314	0.299	0.326
Bravery	0.190	0.283	0.243	0.288
Creativity	0.099*	0.214	0.218	0.315
Curiosity	0.129*	0.264	0.293	0.334
Forgiveness	0.089*	0.190	0.124*	0.129*
Fairness	0.340	0.354	0.269	0.259
Gratitude	0.195	0.340	0.397	0.300
Honesty	0.491	0.269	0.233	0.427
Humour	0.239	0.244	0.062*	0.116*
Hope	0.249	0.279	0.428	0.325
Humility	0.192	0.236	0.115*	0.216
Judgement	0.221	0.141*	0.028*	0.257
Kindness	0.213	0.585	0.276	0.146*
Love	0.340	0.324	0.244	0.200
Leadership	0.277	0.546	0.381	0.301
Love of Learning	0.118*	0.173	0.054*	0.106*
Perseverance	0.482	0.243	0.321	0.572
Perspective	0.211	0.206	0.187	0.164
Prudence	0.198	0.178	0.070*	0.227
Spirituality	0.046*	0.183	0.266	0.171
Social Intelligence	0.288	0.473	0.411	0.257
Self-regulation	0.152*	0.015*	0.043*	0.194
Teamwork	0.191	0.363	0.361	0.289
Zest	0.164	0.153*	0.407	0.378

Note.
* = Non-significant p-value (p >.05)
n = 161

4.3.1.1 Task Performance. The highly correlated character strengths that will be discussed in terms of task performance are love, fairness and social intelligence.

4.3.1.1.1 Love and Task Performance. Love and task performance in a virtual team context possess a statistically significant, partial Pearson correlation coefficient (r (159) = .340, $p < .001$). The correlation between the two variables is considered moderate. The sign of the coefficient is positive, indicating that love and task performance trend in the same direction. Love was the third highest correlating character strength with task performance.

The correlation between love and task performance is unexpected at face value. One would expect love to be more highly correlated with job performance dimensions relating to contextual performance. However, Table 11 illustrates that task performance was the highest correlating job performance dimension out of the four dimensions. The correlation between love and task performance was even higher than love and interpersonal facilitation, which is contrary to expectations considering the conceptual definition of interpersonal facilitation. However, delving deeper into the definitions of the two constructs and looking at the virtual team context, the relationship becomes more plausible.

Peterson and Seligman (2004, p. 293) describe love as “a reciprocated relationship with another person”. They go on to further describe the character strength of love as including “…mentoring relationships, and the emotional bonds between teammates, co-workers”. Task performance is the role-related behaviours performed by employees as required by the job description (Williams & Anderson, 1991). Therefore, for virtual team employees, there appears to be a correlation between the acceptance and expression of love in their lives and how well they perform their role-related tasks.

The researcher of this study theorises that due to the lack of in-person communication, where it would be easier for love to be given or received, virtual team employees may be using the performance of their tasks as a means of communicating and receiving love to and from their colleagues. In virtual teams, many work structures may be task-based (Xue et al., 2004). It is possible that employees, who possess love as a character strength, may be attempting to show their teammates positive affect by performing their tasks well. The performing of tasks to a high standard also allows employees to receive positive affect from other employees for “a job well done”. Peterson and Seligman (2004, p. 293) state that love “involves strong positive feelings, commitment, and even sacrifice”. It is therefore plausible that, for e.g., employees high on the character strength of love will be more committed and sacrifice more to complete their daily tasks competently in virtual teams, to show and receive positive affect towards and from their colleagues.

4.3.1.1.2 Fairness and Task Performance. Fairness and task performance possess a moderate, statistically significant partial Pearson correlation (r (159) = .340, p < .001). Furthermore, the relationship between the variables is positive indicating the variables increase and decrease in the same direction. Fairness was the fourth highest correlating character strength with task performance.

The strength of the correlation between fairness and task performance makes conceptual sense. Peterson and Seligman (2004, p. 392) describe fairness as "the product of moral judgment—the process by which people determine what is morally right, what is morally wrong, and what is morally proscribed". Therefore, it appears that individuals who identify with the character strength of fairness feel it is morally right to perform the duties required of them, leading to higher task performance. Interestingly, fairness was one of the lower correlating character strengths in a traditional work environment (Harzer & Ruch, 2014). Conversely, in a virtual team environment, being the fourth highest correlating character strength, fairness appears to be important in relation to task performance. This difference may be due to the lack of in-person supervision in a virtual team, meaning employees with a better sense of fairness place more emphasis on the moral duty to complete their daily tasks as required by the job description.

4.3.1.1.3 Social Intelligence and Task Performance. Social intelligence and task performance possess a statistically significant, partial Pearson correlation (r (159) = .288, p < .001). The size of the correlation is small bordering on moderate, however, social intelligence is the fifth highest correlating character strength with task performance. The relationship is positive, once again indicating that the variables trend in the same direction.

Social intelligence is "one's relationships with other people, including the social relationships involved in intimacy and trust, persuasion, group memberships, and political power" (Peterson & Seligman, 2004, p. 339). An explanation for the correlation between social intelligence and task performance is based on a similar premise to that of the explanation for the association between love and task performance. Virtual team employees with higher social intelligence may recognise that in a virtual team there is less opportunity to use contextual performance to create a good impression with colleagues. Therefore, virtual team employees with higher social intelligence may be more motivated to perform their daily tasks as they recognise the effect that competent task performance has on social intelligence aspects, such as "trust, persuasion, group memberships, and political power".

Another explanation for the association between social intelligence and task performance may be that cognitive or academic intelligence is an overlapping construct with social intelligence (Riggio et al., 1991). Cognitive intelligence has been proven to possess a

strong association with task and job performance (Côté & Miners, 2006; Nguyen & Nham, 2019; Riggio et al., 1991) and therefore the association between social intelligence and task performance may be partly explained by this.

4.3.1.2 Interpersonal Facilitation. The highest correlating character strengths that will be discussed in terms of interpersonal facilitation are social intelligence and fairness.

4.3.1.2.1 Social Intelligence and Interpersonal Facilitation. Social intelligence and interpersonal facilitation possess a statistically significant, partial Pearson correlation (r (159) = .473, $p < .001$). Furthermore, the relationship between the variables is positive, indicating that they trend in the same direction. Social intelligence also possesses a moderate to large effect size with interpersonal facilitation and was the third highest correlating character strength.

There is a significant association between social intelligence and interpersonal facilitation. Considering the aforementioned definition of social intelligence, it was expected that there will be a sizable correlation between the two variables as interpersonal facilitation is a willingness to help, cooperate or assist. Socially intelligent virtual team members will naturally see interpersonal facilitation behaviours as means of fostering good relationships with their colleagues thus leading to outcomes desirable to socially intelligent employees such as “intimacy and trust, persuasion, group memberships, and political power” (Peterson & Seligman, 2004, p. 339).

4.3.1.2.2. Fairness and Interpersonal Facilitation. Fairness and interpersonal facilitation possess a statistically significant partial Pearson correlation (r (159) = .354, $p < .001$). The size of the correlation indicates there is a moderate linear relationship between the two variables. Furthermore, the association between the variables is positive indicating the variables increase and decrease in the same direction. Fairness is the fifth highest correlating character strength with interpersonal facilitation in virtual teams.

These results seem to indicate that virtual team members see helping, assisting and cooperating as morally right (Peterson & Seligman, 2004). Virtual team employees who perceive themselves as possessing higher levels of fairness also perceive themselves to perform helping behaviours more often. This could be due to the fact there are higher barriers to helping in virtual teams and thus virtual employees who see helping or cooperating as a moral obligation are more likely to perform these behaviours.

4.3.1.3 Organisational Support. The highest correlating character strengths that will be discussed in terms of organisational support are hope, social intelligence, zest and gratitude.

4.3.1.3.1 Hope and Organisational Support. There is a positive, statistically significant, partial Pearson correlation (r (159) = .428, p < .001) between hope and organisational support. Hope is the highest correlating character strength with organisational support, in a virtual team context, with a moderate effect size.

Hope is related to concepts such as optimism and future orientation. It is defined as a "cognitive, emotional, and motivational stance toward the future" (Peterson & Seligman, 2004, p. 570). Organisational support encompasses three dimensions, namely representing, loyalty and compliance (Williams & Anderson, 1991). As hope is positively framed, it is more likely that individuals who are optimistic about the future are going to represent their organisation favourably, stay loyal through difficult periods and comply with organisational rules. Therefore, the association between hope and organisational support in a virtual team context is conceptually sound.

A possible reason for hope being the highest correlating character strength in virtual teams, as opposed to one of the lower correlating character strengths in an in-person environment (Harzer & Ruch, 2014), may be due to the lack of daily interactions. Informal in-person conversations may give employees a better idea of the current state of the organisation. Whillans et al. (2021) found that virtual team members tend to have less informal conversations and thus it is proposed that virtual team employees may have a less accurate depiction of the current state of the organisation. Therefore, for virtual team members, higher levels of hope may be required to display the three dimensions of organisational support, namely loyalty, compliance, and representation.

4.3.1.3.2 Social Intelligence and Organisational Support. Social intelligence and organisational support possess a statistically significant, partial Pearson correlation (r (159) = .411, p < .001). The size of the correlation is moderate, indicating a moderate linear relationship between the two variables. Social intelligence is the second highest correlating character strength with organisational support and possesses a positive correlation.

As previously mentioned, social intelligence is "one's relationships with other people, including the social relationships involved in intimacy and trust, persuasion, group memberships, and political power" (Peterson & Seligman, 2004, p. 339). An important aspect of social intelligence is therefore group membership and as such individuals with a higher level of social intelligence are more likely to be aware of group membership. Therefore, these individuals would be more likely to enact the three dimensions of organisational support, by representing the organisation, staying loyal (to continue group membership) and complying with the organisation's rules (to avoid exclusion).

4.3.1.3.3 Zest and Organisational Support. Zest was the third highest correlating character strength with organisational support. The two variables possessed a statistically significant, partial Pearson correlation (r (159) = .407, p < .001). The relationship was moderate and positive, indicating that the variables trend in the same direction with a moderate, linear relationship.

Zest is described as a dynamic characteristic of well-being and the subjective experience of feeling alive, energetic and spirited (Peterson & Seligman, 2004). The authors go on to state that zest is present when individuals feel psychologically integrated into society and where meaning and purpose are present. The finding of meaning and purpose and being psychologically integrated will include the work domain, as it makes up a large portion of most people's lives. Therefore, zest would likely be present when an individual feels satisfied in their work. Employees who feel satisfied at work are more likely to enact the three dimensions of organisational support, namely representing, loyalty and compliance (Gill, 2017; Mafini et al., 2013).

Zest may be more important in virtual teams due to the possible separation and loneliness of working in a virtual team (Beer et al., 1984). Individuals with a higher level of zest may buffer the effects of loneliness and thus maintain a positive outlook on their work life. This may lead to higher organisational support. It is important to recognise that correlation cannot infer cause and effect and therefore this relationship between zest and organisational support needs to be further explored to determine the direction of the relationship.

4.3.1.3.4 Gratitude and Organisational Support. The partial Pearson correlation between gratitude and organisational support is positive and statistically significant (r (159) = .397, p < .001). Gratitude is the fourth highest correlating character strength with a moderate effect size with organisational support. The effect size indicates there is a moderate linear relationship between gratitude and organisational support.

Gratitude is described by Peterson and Seligman (2004, p. 554) as a "sense of thankfulness and joy for either life itself or a gift received". Individuals with a higher sense of gratitude are more likely to be appreciative of the good aspects of an organisation, which may lead to higher job satisfaction. Therefore, these individuals will be more likely to enact the three dimensions of organisational support through acts of representing, loyalty and compliance (Gill, 2017; Mafini et al., 2013).

4.3.1.4 Job Dedication. The highest correlating character strengths that will be discussed in terms of job dedication are honesty, zest and appreciation of beauty and excellence.

4.3.1.4.1 Honesty and Job Dedication. Honesty and job dedication possess a statistically significant, partial Pearson correlation (r (159) = .427, p < .001). The size of the correlation is moderate, indicating a moderate linear relationship between the two variables. There is a positive correlation between the two variables, indicating they trend in the same direction. Honesty is the second highest correlating character strength with job dedication.

Harzer and Ruch (2014) found a moderate Pearson correlation between honesty and job dedication in their self-rating sample. Furthermore, it has been found that an ethical approach to leadership predicts job dedication, thus once again indicating the association between honesty and job dedication (Brown et al., 2005). Honesty was not one of the highest correlating character strengths with job dedication in traditional work environments. The importance in virtual teams may once again be due to the lack of in-person management. Virtual team employees with higher levels of honesty/integrity may be more likely, without supervision, to put extra effort into their job and follow organisational rules and procedures, which are fundamental aspects of job dedication (Van Scotter & Motowidlo, 1996).

4.3.1.4.2 Zest and Job Dedication. The partial Pearson correlation between zest and job dedication was statistically significant and positive (r (159) = .378, p < .001). The size of the correlation was moderate with zest being the third highest correlating character strength with job dedication.

The correlation between zest and job dedication is conceptually sound. Zest has been described as the subjective experience of feeling alive, energetic and spirited (Peterson & Seligman, 2004). It is likely that these characteristics would result in the extra effort synonymous with job dedication. Zest also appears more important in virtual teams compared to normal work environments (Harzer & Ruch, 2014). As previously mentioned, zest may once again act as a buffer to the lack of interpersonal interaction in virtual teams thus facilitating the increased effort required for job dedication.

4.3.1.4.3 Appreciation of Beauty and Excellence and Job Dedication. Appreciation of beauty and excellence and job dedication possess a statistically significant and positive partial Pearson correlation (r (159) = .326, p < .001). The strength of the relationship between the variables is moderate, but appreciation of beauty and excellence is the fifth highest correlating character strength with job dedication.

Peterson and Seligman (2004, p.537) define appreciation of beauty of excellence as “the ability to find, recognize, and take pleasure in the existence of goodness in the physical and social worlds”. The authors go on to outline that feelings of admiration and awe are included in the consensual definition. It is thus plausible that virtual team employees who appreciate excellence, and have more admiration in general, would admire dedication as a

trait. It thus appears as if these employees may attempt to replicate this trait in their own lives through extra effort, taking initiative or following rules and procedures i.e. job dedication.

4.3.1.5 Leadership. Leadership is mentioned as it is a character strength that correlated highly with all four of the job performance dimensions. Leadership was the sixth highest correlating character strength with task performance, the second highest correlating character strength with interpersonal facilitation, the fifth highest correlating character strength with organisational support and the eighth highest correlating character strength with job dedication. Therefore, the construct of leadership appears to be strongly related to job performance as an overall construct.

4.3.1.6 Teamwork. The partial correlations between teamwork and the four dimensions of job performance in Table 11 indicate that an individual's propensity for teamwork relates more to contextual performance behaviours than to task performance behaviours in a virtual team environment. The partial correlations relating to interpersonal facilitation, organisational support and job dedication respectively (r (159) = .363, p < .001; r (159) = .361, p < .001; r (159) = .289, p < .001) were significantly higher than that of task performance (r (159) = .191, p < .05). Therefore, it appears as if an individual's propensity for teamwork is not as important for task completion, in a virtual environment, as it is in a traditional work setting (Harzer & Ruch, 2014). However, teamwork appears to still be as important for contextual behaviours.

4.4 Regression Analysis

To further satisfy the second objective of this study, the predictive capabilities of character strengths were explored to better understand the relationship between character strengths and job performance in a virtual team environment. Best subsets regression analysis was initially run to find the best six predictors. Analysis of the adjusted R-squared, in relation to the number of predictors, indicated that running the best four predictors would likely provide the most relevant information. This is in line with the principle of parsimony which states that the simplest explanation of an event is generally preferred (Laird, 1919). Therefore, the results of the best four subsets regression for each of task performance, interpersonal facilitation, organisational support and job dedication are reported. The variable measuring SDR (labelled SD) was included in the regression analysis to control for SDR.

The values that will be reported are the standardised beta coefficient (b*) and p-value. The standardised beta coefficient indicates by how many standardised units the dependent variable will increase when the independent variable increases by one standardised unit, while all other variables are held constant. The p-value is the probability that the null hypothesis, which is that there is no association between the two variables, is retained. The final column

"#" is the number of times the variable appears in the best 20 models computed by the program, ranking, according to the highest R-squared, the best 20 out of all possible combinations of four predictors.

4.4.1 Task Performance

Table 12 displays the results of the best subsets regressions, finding the best four predictors of task performance while controlling for SDR. The full subset regression table has been included for task performance, but in the interest of space, a shortened version of the table will be included for the other three job performance dimensions, with the full tables included in Appendix F. The variables that appeared in the model the greatest number of times were appreciation of beauty and excellence, bravery, honesty and perseverance. The remaining 21 variables were excluded from the regression table as they did not contribute to obtaining the highest R-squared. The relationship between appreciation of beauty and excellence and task performance was non-significant. Despite appreciation of beauty and excellence being on the cusp of significance, there was a moderate, bordering on small, standardised beta coefficient (β = 0.1321, $p > .05$), indicating that appreciation of beauty and excellence is not a significant predictor of task performance. Bravery is a statistically significant, negative predictor of task performance (β = -0.1623, $p < .05$), indicating that for every 1 unit increase or decrease in bravery, task performance will move by 0.1623 of a unit in the opposite direction. The beta coefficient is towards the lower end of moderate and thus does not provide much predictive power over task performance, while holding the other variables constant.

Honesty and perseverance were the two strongest predictors of task performance in virtual teams, both appearing in the best 20 models every time. Honesty and perseverance both had significant, large regression coefficients respectively (β = 0.3855, $p < .01$; β = 0.3142, $p < .01$). Therefore, honesty and perseverance appear to explain a large amount of variance in task performance.

Table 12

Best Subsets Regression Summary for Task Performance

Variable	Std. b	St. Err. of std. b	b	St. Err. of b	t(156)	p-value	#
(Intercept)			0.6848	0.1179	5.81	<0.01	
AB	0.1321	0.0670	0.0774	0.0392	1.97	0.05	5
B	-0.1623	0.0789	-0.1102	0.0536	-2.06	0.04	9
H	0.3855	0.0923	0.2940	0.0704	4.18	<0.01	20
P	0.3142	0.0846	0.2147	0.0578	3.71	<0.01	20
FA	Excluded						5
HU	Excluded						5

Table 12 Continued

Variable	Std. b	St. Err. of std. b	b	St. Err. of b	t(156)	p-value	#
J	Excluded						5
HM	Excluded						3
K	Excluded						2
L	Excluded						2
Z	Excluded						2
LE	Excluded						1
LL	Excluded						1
SD	Excluded						0
C	Excluded						0
CU	Excluded						0
F	Excluded						0
G	Excluded						0
HO	Excluded						0
PE	Excluded						0
PR	Excluded						0
SR	Excluded						0
SI	Excluded						0
S	Excluded						0
TW	Excluded						0

Note.
R = .599, R^2= .359, and Adjusted R^2= .343
= number of times a variable was included in the best 20 models. AB = appreciation of beauty and excellence; B = bravery; C = creativity; CU = curiosity; FA = fairness; F = forgiveness; G = gratitude; H = honesty; HO = hope; HU = humility; HM = humour; J = judgement; K = kindness; LE = leadership; L = love; LL = love of learning; P = perseverance; PE = perspective; PR = prudence; SR = self-regulation; SI = social intelligence; S = spirituality; TW = teamwork; Z = zest; SD = social desirability

Honesty and perseverance, being the best predictors of task performance, were entered as covariates into a multiple linear regression as seen in Table 13. The social desirability variable (SD) was also entered as a covariate to control for SDR. The SD variable possessed a non-significant relationship with task performance (p >.05), indicating that SDR does not explain any significant variance in task performance while holding honesty and perseverance constant. The Breusch-Pagan test indicated the presence of heteroskedasticity, and thus the estimation method was adapted to account for this finding. The results show a statistically significant regression equation with the R-squared indicating that honesty and perseverance collectively explain 33.2% of the variance in task performance (p < .001). Therefore, it appears as if honesty and perseverance, as character strengths, strongly predict whether a virtual team employee will complete the daily tasks, duties and assignments as required by their job description.

Table 13

Regression Summary for Task Performance

Model	Variable	Std. b	b	St. Err. of b	t (156)	p-value
H_0	(*Intercept*)		1.505	0.035	42.837	< .001
H_1	(*Intercept*)		0.744	0.175	4.2387	< .001
	H	0.319	0.244	0.074	3.279	< .01
	P	0.305	0.209	0.072	2.895	< .01
	SD	-0.023	-0.056	0.171	-0.328	0.743

Note.
R= .576 R^2= . 332 Adjusted R^2= .319
H = honesty; P = perseverance; SD = social desirability
Standard errors and t-values have been adapted for heteroskedasticity

4.4.2 Interpersonal Facilitation

Table 14 displays the summarised results of the best subsets regressions, finding the best four predictors of interpersonal facilitation while controlling for SDR. The variables that appeared in the model the greatest number of times were humility, kindness, leadership and social intelligence. The remaining 21 variables were excluded from the analysis. Humility was a non-significant predictor of interpersonal facilitation. Kindness, leadership and social intelligence appeared in the best 20 models every time and all had statistically significant, large to moderate beta coefficients respectively (β = 0.3378, p < .01; β = 0.2792, p < .01; β = 0.209, p < .01). The three variables were entered into a multiple, linear regression along with the SDR variable, SD. The results are presented in Table 15.

Table 14

Best Subsets Regression Summary for Interpersonal Facilitation

Variable	Std. b	St. Err. of std. b	b	St. Err. of b	t(156)	p-value	#
(*Intercept)*			0.2642	0.1271	2.08	0.04	
HU	0.1023	0.0598	0.0658	0.0385	1.71	0.09	1.
K	0.3378	0.0690	0.2717	0.0555	4.89	<0.01	20.
LE	0.2792	0.0697	0.2233	0.0557	4.01	<0.01	20.
SI	0.2090	0.0669	0.1514	0.0485	3.12	<0.01	20.
Rest of Character Strengths excluded							

Note.
R= .698 R^2= .488 Adjusted R^2= .474 CV-RA2=0.45
# = number of times a variable was included in the best 20 models. HU = humility; K = kindness; LE = leadership; SI = social intelligence; SD = social desirability

The R-squared of Table 15 indicates that kindness, leadership and social intelligence collectively explain 47.8% of the variance in interpersonal facilitation. The Breusch-Pagan test indicated the presence of heteroskedasticity, and thus the estimation method was adapted to

account for this finding. The regression equation is statistically significant ($p < .05$) and the beta coefficients range from moderate to large and are all statistically significant. The SD variable possesses a non-significant relationship with interpersonal facilitation ($p > .05$), thus indicating that SDR is not a significant predictor of interpersonal facilitation. Therefore, it appears as if the presence of kindness, leadership and social intelligence for virtual team members strongly predicts whether these employees will help, support and cooperate with their teammates in a virtual environment.

Table 15

Regression Summary for Interpersonal Facilitation

Model	Variable	Std. b	b	St. Err. of b	t (156)	p-value
H_0	(*Intercept*)		1.647	0.038	43.113	< .001
H_1	(*Intercept*)		0.357	0.171	2.094	0.038
	K	0.352	0.283	0.064	4.405	< .001
	LE	0.301	0.24	0.058	4.156	< .001
	SI	0.207	0.15	0.058	2.568	0.011
	SD	0.006	0.016	0.181	0.09	0.929

Note.
R= .691 R^2= .478 Adjusted R^2= .465
K = kindness; LE = leadership; SI = social intelligence; SD = social desirability
Standard errors and t-values have been adapted for heteroskedasticity

4.4.3 Organisational Support

Table 16 shows the results of the best subsets regressions, finding the best four predictors of organisational support, while controlling for SDR. The combination of variables that resulted in the highest R-squared was humour, leadership, social intelligence and zest. Humour appears to be a statistically significant predictor of organisational support with a negative beta coefficient (β = -0.178, $p < .01$). Therefore, as humour increases or decreases, organisational support should increase or decrease in the opposite direction. Martin et al. (2003) found that the majority of researchers don't take the negative aspect of humour into account. Types of negative humour can lead to emotional exhaustion, depersonalisation and lower levels of job satisfaction (Avtgis & Taber, 2006). Therefore, employees in virtual teams with higher levels of these types of humour may be less likely to enact the three dimensions of organisational support namely, representation, loyalty and compliance (Borman et al., 2001).

Leadership, social intelligence and zest were moderate to strong predictors of organisational support respectively (β = 0.2388, $p < .01$; β = 0.2904, $p < .01$; β = 0.2791, $p < .01$). Zest and social intelligence were the two best predictors of organisational support, the

reasoning for which has been explained in the correlation analysis. Looking at leadership, it makes conceptual sense that this variable predicts organisational support, as the dimensions of representing, loyalty and compliance should typically be conveyed by leaders in an organisation.

Table 16

Best Subsets Regression Summary for Organisational Support

Variable	Std. b	St. Err. of std. b	b	St. Err. of b	t(156)	p-value	#
(*Intercept*)			0.8985	0.1285	6.99	<0.01	
HM	-0.1780	0.0692	-0.1067	0.0415	-2.57	0.01	8.
LE	0.2388	0.0732	0.1835	0.0562	3.26	<0.01	6.
SI	0.2904	0.0801	0.2020	0.0558	3.62	<0.01	20.
Z	0.2791	0.0739	0.1581	0.0418	3.78	<0.01	11.
Rest of Character Strengths excluded							

Note.
R= .598 R^2= .357 Adjusted R^2= .341 CV-RA2=0.30
# = number of times a variable was included in the best 20 models. HM = humour; LE = leadership; SI = social intelligence; Z = zest; SD = social desirability

The relationship between humour and organisational support is considered moderate but still significantly lower than the other three variables. Therefore, leadership, social intelligence and zest were entered into a separate multiple, linear regression analysis as seen in Table 17. SD was included as a control variable but the non-significant beta coefficient indicated a negligible effect. The results thus show that social intelligence, zest and leadership explain 33.4% of the variance in organisational support. The linear regression equation is statistically significant (p < .001) and all three variables possess a moderate, statistically significant regression coefficient (p < .01). Therefore, the three variables can be considered moderate predictors of organisational support in virtual teams.

Table 17

Regression Summary for Organisational Support

Model	Variable	Std. b	b	St. Err. of b	t (156)	p-value
H_0	(*Intercept*)		1.858	0.037	50.642	< .001
H_1	(*Intercept*)		0.953	0.205	4.636	< .001
	SI	0.224	0.156	0.055	2.822	0.005
	Z	0.259	0.147	0.044	3.362	< .001
	LE	0.216	0.166	0.057	2.901	0.004
	SD	-0.067	-0.17	0.179	-0.946	0.346

Note.
R= .578 R^2= .334 Adjusted R^2= .317
LE = leadership; SI = social intelligence; Z = zest; SD = social desirability

4.4.4 Job Dedication

Table 18 shows the results of the best subsets regressions, finding the best four predictors of job dedication, while controlling for SDR. The variables that appeared in the model the greatest number of times, resulting in the highest R-squared, were appreciation of beauty and excellence, humility, judgement and perseverance. Perseverance is clearly the strongest predictor of job dedication, with a very large beta coefficient (β = 0.5207, $p < .01$). The predictive strength of perseverance was expected considering the strong conceptual overlap of the two definitions as explained in the correlation analysis. Appreciation of beauty and excellence was the next strongest predictor, with a statistically significant, moderate beta coefficient (β = 0.2066, $p < .01$), which is much lower than the coefficient of perseverance. Both humility and judgement possessed statistically significant beta coefficients respectively, the effect size of which is considered small to moderate (β = 0.1253, $p < .05$; β = 0.1476, $p < .05$).

Table 18

Best Subsets Regression Summary for Job Dedication

Variable	Std. b	St. Err. of std. b	b	St. Err. of b	t(156)	p-value	#
Intercept			0.3986	0.1455	2.74	<0.01	
AB	0.2066	0.0591	0.1470	0.0420	3.50	<0.01	20.
HU	0.1253	0.0604	0.0901	0.0434	2.07	0.04	5.
J	0.1476	0.0606	0.1328	0.0545	2.44	0.02	16.
P	0.5207	0.0612	0.4323	0.0508	8.50	<0.01	20.
Rest of Character Strengths excluded							

Note.
R= .695 R^2= .484 Adjusted R^2= .47 CV-RA2=0.45
# = number of times a variable was included in the best 20 models. AB = appreciation of beauty and excellence; HU = humility; J = judgement; P = perseverance; SD = social desirability

Perseverance and appreciation of beauty and excellence were entered into a multiple, linear regression analysis as the two strongest predictors of job dedication. SD was also entered to control for SDR. The results are presented in Table 19. Perseverance and appreciation of beauty and excellence explain 45.6% of the variance in job dedication ($p < .001$). Perseverance is still the strongest predictor, however, it appears as if the combination of a persistent nature and an appreciation or admiration of excellence (or goodness in general), predicts whether an individual will be dedicated to their job by taking on challenging tasks and putting in extra effort (Peterson & Seligman, 2004; Van Scotter & Motowidlo, 1996). SD also appeared to explain a small amount of variance in job dedication, even though the relationship was non-significant ($p > .05$), bordering on the cut-off, with a small beta coefficient.

Table 19

Regression Summary for Job Dedication

Model	Variable	Std. b	b	St. Err. of b	t (156)	p-value
H_0	(*Intercept*)		1.939	0.043	45.415	< .001
H_1	(*Intercept*)		0.995	0.196	5.073	< .001
	P	0.54	0.449	0.053	8.425	< .001
	AB	0.229	0.163	0.043	3.828	< .001
	SD	-0.119	-0.35	0.186	-1.88	0.062

Note.
R= .675 R^2= .456 Adjusted R^2= .445
AB = appreciation of beauty and excellence; P = perseverance; SD = social desirability

4.5 Summary of Findings

The findings of the results and discussion will be summarised by first discussing the correlation analysis and then the regression analysis. Comments will also be made on the outcome of the research question, research objectives and conceptual model.

4.5.1 Correlation Analysis

The character strengths that were highly correlated with task performance include (in order of effect size), honesty, perseverance, love, fairness, and social intelligence. Interpersonal facilitation correlated highly with kindness, leadership, social intelligence, teamwork and fairness. Organisational support was highly correlated with hope, social intelligence, zest, gratitude and leadership. Job dedication's highest correlating character strengths were perseverance, honesty, zest, curiosity and appreciation of beauty and excellence. Further findings will be summarised in the following subsections.

4.5.1.1 Teamwork. Teamwork is not related to task performance in virtual teams as much as it is in in-person teams. Teamwork is still, however, strongly associated with contextual behaviours such as interpersonal facilitation and organisational support. Therefore, it appears as if teamwork is still important for effective contextual performance in virtual teams, but it is not as important for individual task performance (Harzer & Ruch, 2014; Ruch et al., 2018).

4.5.1.2 Self-regulation. Self-regulation appears to not consistently correlate with job performance in virtual teams. Reasons relating to the virtual team environment have been proposed as an explanation for the lack of association between self-regulation and various variables. However, it also has been discussed that this may be due to the individual items of the VIA-72 self-regulation scale (*VIA-72*, 2020). The love of learning scale also appeared to

require revision, with an outdated perception of learning mediums and methods in the current, technologically-orientated world (O'Neil-Hart, 2017).

4.5.1.3 Effect of Contextual Factors. Another finding that is emerging from the analysis is that virtual team members may be displaying typically contextual factors through the performing of tasks. For example, love and social intelligence would be expected to only be associated with job performance dimensions such as interpersonal facilitation or organisational support. It is thus possible, that in a virtual environment, task performance means more than just simply completing tasks. The high correlation between love and task performance, and social intelligence and task performance, may indicate that employees see the effective performance of their daily tasks as a means of communicating positive affect towards their colleagues. It is possible that due to the lack of opportunity to show positive affect towards colleagues face-to-face, the better completion of one's tasks is a way to build positive relationships (i.e., social intelligence) and act in a selfless manner (i.e., love).

4.5.1.4. Integrity-related Strengths. The correlation analysis appeared to indicate the importance of integrity-related strengths, such as fairness and honesty for task performance and job dedication. The nature of virtual teams means there is naturally less supervision (O'Neill et al., 2014), and therefore it makes sense that employees who identify with strengths such as fairness and honesty are more likely to perform their tasks better. These employees may need less supervision and likely are performing their tasks from a moral obligation to do what is right, as opposed to a fear of the consequences (O'Neill et al., 2014).

4.5.2 Regression Results

Honesty and perseverance were found to be strong predictors of task performance. Kindness, leadership and social intelligence were found to be moderate to strong predictors of interpersonal facilitation. Leadership, social intelligence and zest were found to be moderate predictors of organisational support. Perseverance was found to be a very strong predictor of job dedication, with appreciation of beauty and excellence being a moderate predictor. It is therefore apparent that certain character strengths possess significant predictive validity over various job performance dimensions in virtual teams.

4.5.3 Comment on Research Question, Objectives and Conceptual Model

The objectives of this study were as follows:

Objective 1: To examine the relationship of each of the 11 identified highest correlating character strengths, according to Harzer and Ruch (2014), with their respective sub-dimension of individual job performance, namely: task performance; job dedication; organisational support; and interpersonal facilitation, all within virtual teams.

Objective 2: To examine, on an exploratory level, the relationship between all 24 character strengths and self-rated individual job performance within virtual teams.

Objectives 1 and 2 have both been accomplished. Looking specifically at objective 1, the results of Harzer and Ruch (2014) were analysed in relation to their replicability in virtual teams. Regarding objective 2, notable relationships were found between various character strengths and job performance dimensions in virtual teams.

The research question was posed as: Which character strengths are the most strongly associated with the dimensions of self-rated, individual job performance in virtual teams? The correlation analysis and regression results sections have answered the research question, indicating that certain character strengths are strongly associated with job performance in virtual teams, while other character strengths possess predictive validity over job performance dimensions in virtual teams.

Finally, the conceptual model was proposed in chapter 3. As previously mentioned, the majority of the relationships in the conceptual model were proved, with a positive and significant relationship found between the relevant variables. However, relationships b5; b13 and b18 were found to be non-significant, indicating that these relationships should not be included in any further iterations of the conceptual model.

Despite the majority of the hypothesized relationships being proven, the researcher would still not feel comfortable declaring the conceptual model as valid. The correlation analysis indicated that there were other variables with higher correlations with the relevant dimensions of job performance. Therefore, even if b5, b13 and b18 were removed, the remaining model could technically be described as valid however it could still not be considered the best model to describe the relationships between character strengths and job performance in virtual teams. The proposed conceptual model, therefore, requires further research and refinement.

4.6 Conclusion

Chapter 4 presented and discussed the results of the statistical analysis of this study. The chapter began by presenting the results of the preliminary analysis to set the foundation off which the hypothesized relationships could be evaluated. Following this, notable correlations between the variables were reported and discussed before the results of the regression analysis were also reported and discussed. The chapter concluded with a summary of the findings, an analysis of the research objectives, question, and conceptual model and then the final, concluding remarks.

5 Implications, Limitations, Recommendations and Conclusion

The following section will outline the implications of the study, the resulting recommendations and limitations and conclude with the final remarks.

5.1 Implications

The study aimed to provide insight into three main fields of research, namely, character strengths, job performance and virtual teams. Research has been performed on both the concepts of character strengths and job performance while the relationship between personality characteristics and individuals' performance is a well-researched topic. Character strengths are an alternative determinant of an individual's behaviour and therefore provide a unique perspective of explaining employee behaviour. In an organisational setting, employee behaviour typically translates to job performance, whether it be through a direct consequence of task performance, or a more indirect approach of influencing job performance through contextual performance. The immersion in the 4IR and the acceleration of virtual team formation, due to the Covid-19 pandemic, has increased the importance of understanding the behaviour of employees in this virtual world. The implications of this research will therefore be outlined.

5.1.1 Contributions to Literature

Contributions were made to the literature in the fields of character strengths, job performance and virtual teams.

5.1.1.1 Character Strengths. The last 30 years have been focused on the prediction of job performance using common, well-researched predictors such as cognitive abilities and broad personality traits (Harzer et al., 2021). The study of character strengths, specifically in the workplace, is still in its early stages (Littman-Ovadia & Lavy, 2015), but the positive psychology movement has created interest in a positive, strengths-based approach to personality (Seligman & Csikszentmihalyi, 2000). The results of this study have therefore added to the literature on character strengths by displaying the predictive power and associations between character strengths and job performance, specifically in virtual teams.

It could be argued that this research has provided one of the first steps to the use of character strengths for recruitment and selection in virtual teams. Job performance has been described as "a decisive production resource" (Harzer et al., 2021, p. 2), as it is the ultimate measure of a successful recruitment process. The results of this study indicate that a combination of seven character strengths, i.e. honesty, perseverance, kindness, leadership, social intelligence, zest, and appreciation of beauty of excellence, predicted between 33% and

48% of the variance in various job performance dimensions. Therefore, it appears as if the presence of certain character strengths can potentially significantly predict job performance in virtual teams.

More specifically, the research may also provide information to people practitioners designing and populating virtual teams, allowing them to maximise job performance. Understanding which character strengths relate to which dimensions of job performance, allows practitioners to redesign or populate teams catering to the signature strengths of employees in relation to their primary role in the team. However, a lack of resources (time and financial) has restricted the sample size of this study (n = 161), and therefore a more robust model would need to be developed, through further research, to confirm the predictive power of character strengths.

5.1.1.2 Job Performance. The results of the principal component analysis (PCA) on the four job performance dimensions indicated that, in virtual teams, job performance can be divided into four distinct job performance constructs. The factor structure indicated that the task performance and contextual performance split is still present in virtual teams (Motowidlo & Van Scotter, 1994). Furthermore, the only previous validation of the job performance measures came from Harzer and Ruch (2014), however, the result of the PCA and generation of Cronbach's alpha for this study represents the next step to proving that the job performance measures possess adequate reliability and validity.

5.1.1.3 Virtual Teams. The research provides valuable information on the nature of virtual teams. Firstly, the results of Harzer and Ruch (2014) appear to be largely replicable in a virtual team context. The majority of the 18 hypotheses were retained, with statistically significant, positive partial correlations. Secondly, certain character strengths were found to be highly correlated with various job performance dimensions, indicating that certain strengths may be more valuable in a virtual team environment. Third, the importance of integrity-related strengths has been discussed and this provides support for the prediction of Sosik and Zhu (2020), who postulate that honesty (along with bravery) will be a crucial character strength for effective leadership during the 4IR. Finally, it was theorised that employees in virtual teams may be using task performance as a means of communicating positive affect with their colleagues. This may be a new finding of interest regarding the nature of virtual teams, but more research is needed with a larger sample size to confirm and expand on this finding. The findings of this study have therefore significantly contributed to bettering the understanding of virtual teams.

5.1.2 Interventions

Despite the contributions to the literature, the researcher believes a valuable contribution of this study is to people practitioners implementing interventions. Chapter 2 touched on the positive effects of a strength-based approach on job performance, with numerous studies finding that strength-based interventions can have a significant, positive effect on various work performance domains (Cable et al., 2013, 2015; Dubreuil et al., 2014). This present research study provides valuable insight into the domains of character strengths and job performance, in virtual teams of course, and this information can be used to target interventions relating to both areas. Both areas relate to different levels of the organisation, with character strength interventions typically targeted at the individual level, while job performance interventions can be targeted at the group/team level as well as the individual level.

Looking specifically at character strengths, the results have applications for individual coaching for leadership and personal development. Coaching is defined by Sir John Whitmore, as cited in Ibarra & Scoular (2019, p. 1), as “unlocking people’s potential to maximize their own performance”. The results of this study indicated the most important character strengths for predicting job performance in virtual teams are honesty, perseverance, kindness, leadership, social intelligence, zest, and appreciation of beauty of excellence. Therefore, the relationship of these character strengths with job performance represents a potential avenue for the designing of a strengths-based approach to the individual development of employees in virtual teams.

Looking at the implications for job performance, the study provides information for people practitioners to target interventions to specific dimensions of job performance. For e.g., organisations, or teams, that have identified issues such as low task performance or a lack of interpersonal facilitation between virtual team employees, may attempt to implement interventions that respectively target honesty and perseverance or kindness, leadership and social intelligence. The division of the job performance dimensions allows practitioners to target certain behaviours, or combinations of behaviours, that they have identified as problematic when designing interventions.

5.2 Limitations and Recommendations

Research studies are typically performed in a specific set of conditions and this can often lead to a number of limitations or caveats that must be noted when interpreting the results of the research. These limitations may have the effect of limiting the replicability of the study or introducing error variance, therefore it is important that the limitations are comprehensively outlined to ensure the academic integrity of the proposed study.

The limitations are as follows:

Firstly, a limitation of this study is the sample size (n = 161). Typically, a larger sample size leads to results and conclusions that can be considered more robust. Marks (1966) as cited in Green (1991), proposed that for any multiple regression analysis a minimum of 200 subjects is sufficient. A lack of time and financial resources meant that the data collection procedure had to be performed within a limited time frame. It would be preferable, in the future, if this research could be replicated with a larger sample size.

The second limitation is the presence of SDR, which has been discussed in the research methodology. The researcher included the SDS-17 to measure SDR and control for it. The inclusion of the SDS-17 should have reduced the effect of SDR on the validity of the results and conclusions.

Third, much of the literature on virtual teams was based on the virtual team environment prior to the onset of the Covid-19 pandemic. The accelerated formation of virtual teams, due to the worldwide lockdown, may have caused the virtual team environment to change and thus certain literature findings or conclusions drawn prior to the pandemic, may now be rendered inaccurate or outdated. Therefore, a limitation of this study is that some of the findings regarding virtual teams, as reported in this study's literature review, may not truly represent the current state of the virtual team environment.

The fourth limitation of the study is the measures used to determine the character strengths (VIA-72) and the dimensions of job performance (TPQ, JDQ, OSQ, IFQ), which will be discussed in the following section.

5.2.1 Limitations of the VIA-72

There are four main limitations of the VIA-72, the first of which is the cultural applicability of the measure. Western researchers often assume that typical Western beliefs, values, concepts and experiences are applicable worldwide (Neuman, 2006). However, it was noted by Biesheuvel (1943, 1954) that factors such as nutrition, home environment and schooling can have a significant effect on the test performance of individuals. Therefore, in a country such as South Africa, where there are such high levels of inequality, it is not surprising that it was determined that culture-specific factors, for example, motivation, attitudes, language proficiency and values, can significantly affect inter-group test response patterns (Schaap & Basson, 2003).

The VIA-72 is only developed in English with no alternate language forms and this immediately imposes a limitation on the study in the South African context. Khumalo et al. (2008) found satisfactory reliability coefficients and means when compared to the Western

sample, however, there was only partial construct validity. du Plessis and de Bruin (2015) found that the majority of the character strengths possessed differential item functioning for either one of the demographic variables of gender, ethnicity and home language group. This can thus be considered a limitation in the South African context. Despite this, the sample only included individuals working in a virtual team and therefore these respondents are likely operating in a formal work environment where English is the primary business language in South Africa (Lowe et al., 2022). Therefore, it is likely that the majority of respondents will have an above-average grasp of the English language. This, however, does not eliminate the limitation of the language barrier but will likely mitigate the effect on the results.

The second limitation of the VIA-72 (*VIA-72*, 2020) is the psychometric properties of the measure found in this study. Each scale of the questionnaire only consists of three items and thus the reliability of some scales was low and certain scales also possessed high inter-item correlations. This is therefore considered a limitation and it is recommended that a longer measure of character strengths is employed to more accurately measure the latent constructs.

The third limitation of the VIA-72 is that the nature of character strengths exacerbates the likelihood of social desirability within respondents. Character strengths, by definition, are desirable characteristics and therefore respondents may overestimate or fake their levels of certain character strengths due to inherent societal pressure to behave in a certain manner. Despite this, studies performed by Peterson and Park (2004) and Peterson and Seligman (2004) maintain that in general there is no relationship between social desirability and character strengths.

The final limitation of the VIA-72 is the self-report nature of the questionnaire. Self-report questionnaires do possess certain weaknesses, such as acquiescent responding, extreme responding and self-enhancement. Acquiescent responding occurs when respondents automatically agree with the item without giving adequate consideration to what the question is asking (Paulhus & Vazire, 2009). Extreme responding is another source of error variance, where respondents consistently answer Likert-type scales with the most extreme answer (Paulhus & Vazire, 2009). Finally, social desirability has already been mentioned as a limitation but there is an alternative theory proposed by John and Robins (1994). The authors propose that individuals naturally favour self-enhancement and therefore this may cause biased test responses. Therefore, an individual's responses may be unrealistic and positively biased which influences test scores.

5.2.2 Limitations of the TPQ, JDQ, OSQ and IFQ

The TPQ, JDQ, OSQ and IFQ have been developed by Harzer and Ruch (2014) to measure the various factors of individual job performance. However, the measures were

derived and then reduced from items utilised by other researchers (Borman & Motowidlo, 1997; Motowidlo & Van Scotter, 1994; Williams & Anderson, 1991). The items were reduced and derived for the purpose of translating into German and therefore, prior to this study, there was minimal psychometric information on the English versions besides the questionnaires' level of internal consistency. The internal consistency found in this study, however, was promising and the PCA indicated the unidimensionality of the job performance constructs. However, the lack of prior research on these measures should be noted when interpreting the results and conclusions.

Furthermore, the current study has been performed with a largely South African sample and it would therefore be ideal should the questionnaire have been proved to be culturally fair (Theron, 2007). The multicultural context of the country would require demographic and cultural sensitivity from the measure (Theron, 2007). However, this procedure is outside the scope of this research study and it is recommended this is explored in further research.

The final limitation regarding the job performance construct is that the sample may have been affected by self-selection bias due to the nature of performance reviews (Heckman, 1990). Employees had free will as to whether they wanted to participate in the study or not, and therefore it is possible that only the higher-performing employees wanted to rate their job performance. The employees who were aware their performance was lower may have chosen to not participate due to the possibility of future cognitive dissonance or risk of future repercussions and embarrassment should their responses be linked back to them.

5.2.3 Recommendations

As previously mentioned, the next logical step for future research would be the replication of this study with a larger sample size. The sample size was sufficient to provide largely valid and reliable results, however, it would be preferable if more respondents were found to increase the robustness of results and conviction of subsequent conclusions.

Harzer et al. (2021), recently explored the predictive power of character strengths on job performance while controlling for cognitive abilities and the big five personality factors. It is recommended that a similar study should be performed with virtual teams to measure the predictive power of character strengths over and above already well-established predictors.

It has been found that certain unexpected character strengths were highly associated with task performance namely love and social intelligence. It would be beneficial to measure the relationship between these two variables and task performance while controlling for the character strengths that have already been found to be significant predictors i.e. honesty and perseverance. This same method could be applied to all dimensions of job performance to

measure the explained variance of unexpected correlations over and above the variance already explained by significant predictors.

Recommendations that have also arisen from the study is the need for the revision of the VIA-72. Some of the scales are outdated and lack relevancy in today's environment, such as the love of learning and self-regulation scales. It is evident that the method of creating the VIA-72, by just picking the three most internally consistent items, may damage the construct validity of the scales. Further research is recommended to address these issues.

It is recommended that the contextual factor of interpersonal facilitation is further explored in the context of virtual teams. A lack of in-person interaction has likely changed the dynamic of interpersonal helping, communicating and supporting in virtual teams. It is proposed that virtual interactions, such as meetings, reduce the opportunity for informal conversations where employees might share feelings, exhibit frustration and ask for support or assistance. Therefore, the differences between this construct in virtual and in-person environments should be further explored.

Virtual teams have been found to have a typical life cycle made up of five phases: preparation, launch, performance management, team development and disbanding (Hertel et al., 2005). It would be beneficial if future research could identify the association between character strengths and job performance within each of these five phases. This may provide further insight into the fostering of good job performance using character strengths throughout the life cycle of a virtual team.

5.3 Conclusion

The emergence of the Fourth Industrial Revolution coupled with the onset of the coronavirus pandemic has accelerated the growth of virtual teams worldwide. The need to explain and predict employee behaviour is ever-present, however, the need is even more pronounced now in this new, emerging virtual environment. Job performance is the most prominent form of employee behaviour and therefore the ability to understand it and possibly predict it is valuable in any context. There are many organisational factors that may affect job performance, however, this research is particularly focused on the human characteristics that affect job performance within virtual teams. Peterson and Seligman (2004) proposed that all humans possess varying amounts of 24 character strengths which influence an individual's behaviour and reactions to situations throughout life. Therefore, this research study has explored whether the presence of certain character strengths can influence employee job performance within virtual teams.

This study began with an initial overview of the relevant constructs and theories as well as outlining the research question to be answered and the objectives to be achieved. Following this, an in-depth literature review was performed, defining each variable and then analysing the relevant literature on the relationship between the two variables. Where possible, the literature was further discussed regarding the relationship between the relevant variables within the context of virtual teams. It was ultimately found that there was little literature regarding certain specific relationships in virtual teams, and even the relationships that had been researched were seldom backed by empirical evidence.

In order to achieve the research objectives and answer the research question, the methodology used to carry out the study was reported. The research approach was further defined, followed by the outlining of the conceptual model which provided a visual representation of the proposed relationships between the different variables. Next, the research and sampling design was proposed which led to the reporting of descriptive statistics and analysis of the measuring instruments. Finally, the procedure used for the statistical analysis of the constructs was outlined to conclude the research methodology.

The fourth chapter began with the preliminary analysis, which reported and then discussed the item analysis, descriptive statistics and PCA procedure. The findings regarding the hypothesized relationships were then reported on for each dimension of job performance. Following this, interesting or significant relationships between non-hypothesized variables were discussed. Finally, the regression results were reported and discussed and the chapter concluded with the summary of findings.

This study concluded by outlining the implications of the research in terms of contributions to the literature and implications for interventions. This was followed by the limitations of the study, which included the limitations of the respective measures. The end of this research paper was signified by the proposal of future research recommendations and the final, concluding remarks.

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Appendix A

Confirmation of Research Ethics Approval

UNIVERSITEIT STELLENBOSCH UNIVERSITY

CONFIRMATION OF RESEARCH ETHICS APPROVAL

REC: SBER - Amendment Form

5 July 2022

Project number: 21968

Project Title: The effect of Character Strengths on Job Performance in Virtual teams

Dear Mr LD Whitfield

Identified supervisor(s) and/or co-investigator(s):

Ms SJ Goosen

Your response to stipulations submitted on 17/06/2022 13:39 was reviewed and approved by the Social, Behavioural and Education Research Ethics Committee (REC: SBE).

Your research ethics approval is valid for the following period:

Protocol approval date (Humanities)	Protocol expiration date (Humanities)
13 June 2022	12 June 2023

GENERAL COMMENTS PERTAINING TO THIS PROJECT:

INVESTIGATOR RESPONSIBILITIES

1. Please take note of the General Investigator Responsibilities attached to this letter. You may commence with your research after complying fully with these guidelines.

2. Your approval is based on the information you provided in your online research ethics application form. If you are required to make amendments to or deviate from the proposal approved by the REC, please contact the REC: SBE office for advice: applyethics@sun.ac.za

3. Always use this project ID number (21968) in all communications with the REC: SBE concerning your project.

4. Please note that the REC has the prerogative and authority to ask further questions, seek additional information, and monitor the conduct of your research and the consent process, where required.

RENEWAL OF RESEARCH BEYOND THE EXPIRATION DATE

You are required to submit a progress report to the REC: SBE before the project approval period expires if renewal of ethics approval is required.

If you have completed your research, you are required to submit a final report to the REC: SBE to close the active REC record for this project.

Project documents approved by the REC:

Document Type	File Name	Date	Version
Research Protocol/Proposal	Note to Reviewer	16/05/2022	1
Default	New Recruitment e-mail	16/05/2022	1
Default	Cover Letter	16/05/2022	1
Default	VIA 72 Permission	16/05/2022	1
Data collection tool	Self-rated Measuring Instrument Items (ALL)	18/05/2022	1
Default	Response Letter for Ethical Clearance	18/05/2022	1
Informed Consent Form	Revised Informed Consent	17/06/2022	2
Research Protocol/Proposal	2nd Revision Research Proposal 2022	17/06/2022	2
Default	2nd Response Letter	17/06/2022	2

Appendix B

Measuring Instruments

Table B1

VIA -72 Character Strengths Measure

Instructions: Please choose one option in response to each statement. Many of the questions reflect statements that many people would find desirable, but we want you to answer only in terms of whether the statement describes what you are like. Please be honest and accurate! Thank you.

Item	Scale
I have taken frequent stands in the face of strong opposition.	Bravery
I never quit a task before it is done.	Perseverance
I always keep my promises.	Honesty
I always look on the bright side.	Hope
I am a spiritual person.	Spirituality
I know how to handle myself in different social situations.	Social Intelligence
I always finish what I start.	Perseverance
I really enjoy doing small favors for friends.	Kindness
As a leader, I treat everyone equally well regardless of his or her experience.	Leadership
Even when candy or cookies are under my nose, I never overeat.	Self-Regulation
I practice my religion.	Spirituality
I rarely hold a grudge.	Forgiveness
I am always busy with something interesting.	Curiosity
No matter what the situation, I am able to fit in.	Social Intelligence
I go out of my way to cheer up people who appear down.	Kindness
One of my strengths is helping a group of people work well together even when they have their differences.	Leadership
I am a highly disciplined person.	Self-Regulation
I experience deep emotions when I see beautiful things.	Appreciation of Beauty & Excellence
Despite challenges, I always remain hopeful about the future.	Hope
I must stand up for what I believe even if there are negative results.	Bravery
I finish things despite obstacles in the way.	Perseverance
Everyone's rights are equally important to me.	Fairness
I see beauty that other people pass by without noticing.	Appreciation of Beauty & Excellence
I never brag about my accomplishments.	Humility
I am excited by many different activities.	Curiosity
I am a true life-long learner.	Love of Learning
I am always coming up with new ways to do things.	Creativity
People describe me as "wise beyond my years."	Perspective
My promises can be trusted.	Honesty
I give everyone a chance.	Fairness
To be an effective leader, I treat everyone the same.	Leadership
I am an extremely grateful person.	Gratitude
I try to add some humor to whatever I do.	Humor
I look forward to each new day.	Zest
I believe it is best to forgive and forget.	Forgiveness
My friends say that I have lots of new and different ideas.	Creativity
I always stand up for my beliefs.	Bravery
I am true to my own values.	Honesty

I always feel the presence of love in my life.	Love
I can always stay on a diet.	Self-Regulation
I think through the consequences every time before I act.	Prudence
I am always aware of the natural beauty in the environment.	Appreciation of Beauty & Excellence
My faith makes me who I am.	Spirituality
I have lots of energy.	Zest
I can find something of interest in any situation.	Curiosity
I read all of the time.	Love of Learning
Thinking things through is part of who I am.	Judgment
I am an original thinker.	Creativity
I have a mature view on life.	Perspective
I can express love to someone else.	Love
Without exception, I support my teammates or fellow group members.	Teamwork
I feel thankful for what I have received in life.	Gratitude
I know that I will succeed with the goals I set for myself.	Hope
I rarely call attention to myself.	Humility
I have a great sense of humor.	Humor
I always weigh the pro's and con's.	Judgment
I enjoy being kind to others.	Kindness
I can accept love from others.	Love
Even if I disagree with them, I always respect the leaders of my group.	Teamwork
I am a very careful person.	Prudence
I have been told that modesty is one of my most notable characteristics.	Humility
I am usually willing to give someone another chance.	Forgiveness
I read a huge variety of books.	Love of Learning
I try to have good reasons for my important decisions.	Judgment
I always know what to say to make people feel good.	Social Intelligence
It is important to me to respect decisions made by my group.	Teamwork
I always make careful choices.	Prudence
I feel a profound sense of appreciation every day.	Gratitude
I awaken with a sense of excitement about the day's possibilities.	Zest
Others consider me to be a wise person.	Perspective
I believe that it is worth listening to everyone's opinions.	Fairness
I am known for my good sense of humor.	Humor

Table B2

Job Performance Items

Instructions: Please choose one option in response to each statement. The following questions represent statements about your job performance that many people may find desirable, but we want you to answer only in terms of whether the statement describes what you are like as an employee. Please be honest and accurate. Thank you.

Items	**Scale**

I complete all my duties	Task Performance
I consistently satisfy the criteria as required by my job description	Task Performance
I perform all tasks that I am reasonably expected to perfrom	Task Performance
I meet all performance requirements of my job	Task Performance
I perform actions that would positively affect my formal performance evaluation	Task Performance
I neglect tasks that I am required to complete	Task Performance
I fail to complete esential tasks or duties.	Task Performance
I put in hours outside of normal hours to get work done on time	Job Dedication
I take notice of small details in my work	Job Dedication
I put more effort into my work than necessary	Job Dedication
I will happily take on a challenging assignment	Job Dedication
I get distracted from work by personal matters	Job Dedication
I take initiative when performing my job	Job Dedication
I actively attempt to overcome obstacles to complete my work	Job Dedication
I tackle most work tasks with enthusiasm	Job Dedication
I endorse, support or defend organisational goals	Organisational Support
I display a positive attitude towards the organisation	Organisational Support
I would stay with the organisation through difficult periods	Organisational Support
I follow organisational procedures, rules and polcies	Organisational Support
I suggest ways to improve the organisation	Organisational Support
I complain about organisational conditions	Organisational Support
I actively look out for the best interests of the organisation	Organisational Support
I participate responsibly in organisational activities	Organisational Support
I congratulate co-workers when they achieve success	Interpersonal Facilitation
I assist co-workers with personal issues	Interpersonal Facilitation
I consult co-workers before taking actions that may affect them	Interpersonal Facilitation
I make other people feel good about themselves	Interpersonal Facilitation
I attempt to help other employees get along	Interpersonal Facilitation
I treat co-workers in a fair manner	Interpersonal Facilitation
I will help a co-worker without being instructed to do so	Interpersonal Facilitation

Reverse-scored items

Table B3

Social Desirability Scale Items (SDS-17)

Instructions: Below you will find a list of statements. Please read each statement carefully and decide if that statement describes you or not. If it describes you, check the word “true”; if not, check the word “false.”

Items	Answer 1	Score 1	Answer 2	Score 2

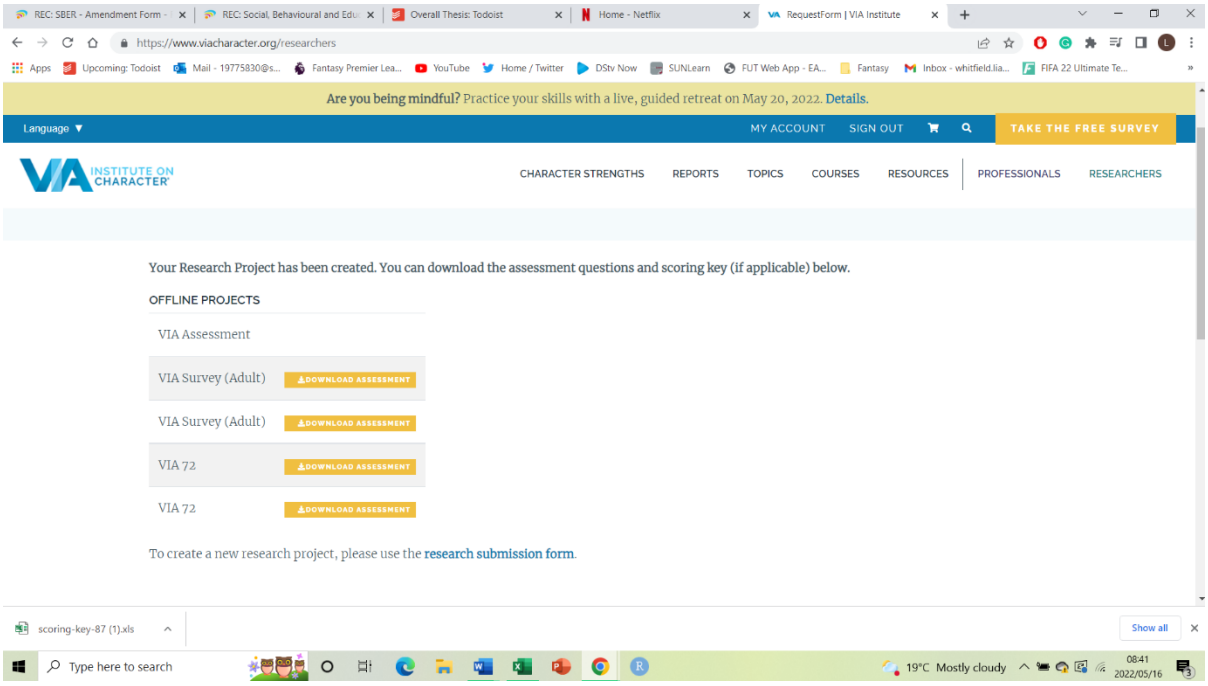
I sometimes litter.	TRUE	0	FALSE	1
I always admit my mistakes openly and face the potential negative consequences.	TRUE	1	FALSE	0
In traffic I am always polite and considerate of others.	TRUE	1	FALSE	0
I always accept others' opinions, even when they don't agree with my own.	TRUE	1	FALSE	0
I take out my bad moods on others now and then.	TRUE	0	FALSE	1
There has been an occasion when I took advantage of someone else.	TRUE	0	FALSE	1
In conversations I always listen attentively and let others finish their sentences	TRUE	1	FALSE	0
I never hesitate to help someone in case of emergency	TRUE	1	FALSE	0
When I have made a promise, I keep it – no ifs, ands or buts.	TRUE	1	FALSE	0
I occasionally speak badly of others behind their back.	TRUE	0	FALSE	1
I would never live off other people.	TRUE	1	FALSE	0
I always stay friendly and courteous with other people, even when I am stressed out.	TRUE	1	FALSE	0
During arguments I always stay objective and matter-of-fact.	TRUE	1	FALSE	0
There has been at least one occasion when I failed to return an item that I borrowed.	TRUE	0	FALSE	1
I always eat a healthy diet.	TRUE	1	FALSE	0
Sometimes I only help because I expect something in return	TRUE	0	FALSE	1

Reverse-scored items

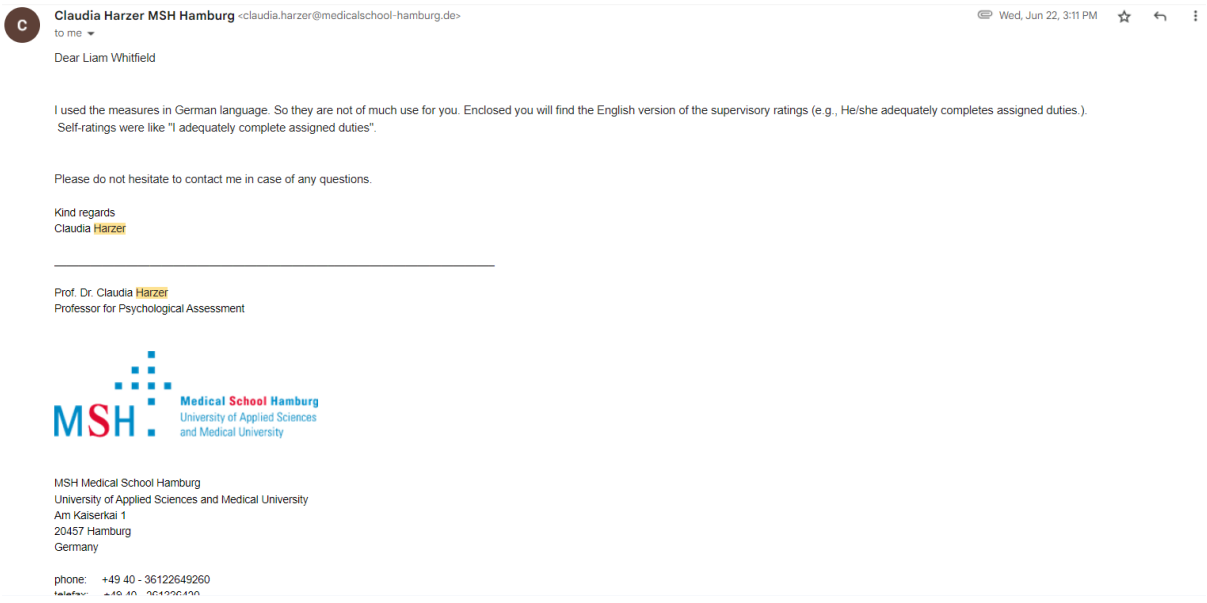
Appendix C

Copyright Permissions for 3 measuring instruments

VIA-72 Permission



Job Performance Items Permission



Claudia Harzer MSH Hamburg <claudia.harzer@medicalschool-hamburg.de>
to me
Wed, Jun 22, 3:11 PM

Dear Liam Whitfield

I used the measures in German language. So they are not of much use for you. Enclosed you will find the English version of the supervisory ratings (e.g., He/she adequately completes assigned duties.). Self-ratings were like "I adequately complete assigned duties".

Please do not hesitate to contact me in case of any questions.

Kind regards
Claudia Harzer

Prof. Dr. Claudia Harzer
Professor for Psychological Assessment

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SDS-17 Permission

Appendix D

Character Strength Reliability Tables

Table D1

Appreciation of beauty and excellence Reliability Table

Variable	Mean if deleted	Var. if deleted	StDv. If deleted	Itm-Totl Correl	Alpha if deleted
AB1	3.956522	2.364569	1.537716	0.570907	0.731449
AB2	3.975155	2.483855	1.576025	0.631497	0.650037
AB3	4.180124	2.868176	1.693569	0.615651	0.681785

Note.
Summary for scale: Mean=6.05590, Std.Dv.=2.28377
Cronbach alpha: .766847, Standardized alpha: .773534, Average inter-item corr.: .533437
AB = Appreciation of beauty and excellence

Table D2

Bravery Reliability Table

Variable	Mean if deleted	Var. if deleted	StDv. If deleted	Itm-Totl Correl	Alpha if deleted
B1	3.782609	1.884418	1.372741	0.382282	0.732343
B2	4.248447	2.186721	1.478757	0.511218	0.541477
B3	4.354037	1.930558	1.389445	0.574573	0.446425

Note.
Summary for scale: Mean=6.19255 Std.Dv.=1.97014
Cronbach alpha: .666123 Standardized alpha: .683590, Average inter-item corr.: .426630
B = bravery

Table D3

Creativity Reliability Table

Variable	Mean if deleted	Var. if deleted	StDv. If deleted	Itm-Totl Correl	Alpha if deleted
C1	4.391	2.176	1.475	0.553	0.653
C2	4.093	2.122	1.457	0.586	0.613
C3	4.522	2.461	1.569	0.537	0.673

Note.
Summary for scale: Mean=6.50311 Std.Dv.=2.12169
Cronbach alpha: .733856 Standardized alpha: .734602
Average inter-item corr.: .480297
C = creativity

Table D4

Curiosity Reliability Table

Variable	Mean if deleted	Var. if deleted	StDv. If deleted	Itm-Totl Correl	Alpha if deleted
CU1	4.043478	1.656495	1.287049	0.438111	0.465974
CU2	4.472050	1.628101	1.275971	0.434119	0.471921
CU3	4.192546	1.882180	1.371926	0.367706	0.566287

Note.
Summary for scale: Mean=6.35404 Std.Dv.=1.80420
Cronbach alpha: .604207 Standardized alpha: .603342
Average inter-item corr.: .337123
CU = curiosity

Table D5

Fairness Reliability Table

Variable	Mean if deleted	Var. if deleted	StDv. If deleted	Itm-Totl Correl	Alpha if deleted
FA1	3.379	1.515	1.231	0.467	0.538
FA2	3.311	1.382	1.176	0.490	0.501
FA3	3.224	1.341	1.158	0.418	0.610

Note.
Summary for scale: Mean=4.95652 Std.Dv.=1.64829
Cronbach alpha: .645558 Standardized alpha: .650275
Average inter-item corr.: .383471
FA = fairness

Table D6

Forgiveness Reliability Table

Variable	Mean if deleted	Var. if deleted	StDv. If deleted	Itm-Totl Correl	Alpha if deleted
F1	4.161	2.048	1.431	0.474	0.459
F2	4.435	1.885	1.373	0.566	0.302
F3	4.783	3.201	1.789	0.286	0.693

Summary for scale: Mean=6.68944 Std.Dv.=2.12790
Cronbach alpha: .621528 Standardized alpha: .611254
Average inter-item corr.: .352607
F = forgiveness

Table D7

Gratitude Reliability Table

Variable	Mean if deleted	Var. if deleted	StDv. If deleted	Itm-Totl Correl	Alpha if deleted
G1	3.925	2.168	1.473	0.613	0.587
G2	4.161	2.434	1.560	0.540	0.675
G3	3.292	1.784	1.336	0.550	0.683

Note.
Summary for scale: Mean=5.68944 Std.Dv.=2.06227
Cronbach alpha: .733515 Standardized alpha: .743822
Average inter-item corr.: .492899
G = gratitude

Table D8

Honesty Reliability Table

Variable	Mean if deleted	Var. if deleted	StDv. If deleted	Itm-Totl Correl	Alpha if deleted
H1	3.298	1.427	1.194	0.635	0.683
H2	3.379	1.515	1.231	0.670	0.649
H3	3.348	1.581	1.257	0.552	0.772

Note.
Summary for scale: Mean=5.01242 Std.Dv.=1.75352
Cronbach alpha: .780073 Standardized alpha: .781451
Average inter-item corr.: .547150
H = honesty

Table D9

Hope Reliability Table

Variable	Mean if deleted	Var. if deleted	StDv. If deleted	Itm-Totl Correl	Alpha if deleted
HO1	3.733	1.947	1.395	0.526	0.640
HO2	3.932	2.014	1.419	0.639	0.490
HO3	3.950	2.507	1.583	0.448	0.718

Note.
Summary for scale: Mean=5.80745 Std.Dv.=2.06614
Cronbach alpha: .713062 Standardized alpha: .715013
Average inter-item corr.: .460712
HO = hope

Table D10

Humility Reliability Table

Variable	Mean if deleted	Var. if deleted	StDv. If deleted	Itm-Totl Correl	Alpha if deleted
HU1	4.745	2.612	1.616	0.483	0.506
HU2	4.832	2.338	1.529	0.550	0.404
HU3	4.398	3.010	1.735	0.340	0.693

Note.
Summary for scale: Mean=6.98758 Std.Dv.=2.25828
Cronbach alpha: .644064 Standardized alpha: .642217
Average inter-item corr.: .380827
HU = humility

Table D11

Humour Reliability Table

Variable	Mean if deleted	Var. if deleted	StDv. If deleted	Itm-Totl Correl	Alpha if deleted
HM1	4.311	2.959	1.720	0.661	0.866
HM2	3.932	2.374	1.541	0.761	0.774
HM3	3.658	2.362	1.537	0.787	0.748

Note.
Summary for scale: Mean=5.95031 Std.Dv.=2.32863
Cronbach alpha: .858008 Standardized alpha: .857929
Average inter-item corr.: .674450
HM = humour

Table D12

Judgement Reliability Table

Variable	Mean if deleted	Var. if deleted	StDv. If deleted	Itm-Totl Correl	Alpha if deleted
J1	3.335	1.279	1.131	0.611	0.531
J2	3.366	1.537	1.240	0.572	0.575
J3	3.596	2.129	1.459	0.463	0.717

Note.
Summary for scale: Mean=5.14907 Std.Dv.=1.80697
Cronbach alpha: .714422 Standardized alpha: .718571
Average inter-item corr.: .463464
J = judgement

Table D13

Kindess Reliability Table

Variable	Mean if deleted	Var. if deleted	StDv. If deleted	Itm-Totl Correl	Alpha if deleted
K1	3.528	1.628	1.276	0.395	0.594
K2	3.292	1.437	1.199	0.525	0.388
K3	3.901	2.077	1.441	0.413	0.572

Note.
Summary for scale: Mean=5.36025 Std.Dv.=1.80815
Cronbach alpha: .626253 Standardized alpha: .632304
Average inter-item corr.: .366993
K = kindness

Table D14

Leadership Reliability Table

Variable	Mean if deleted	Var. if deleted	StDv. If deleted	Itm-Totl Correl	Alpha if deleted
LE1	4.037	1.713	1.309	0.535	0.327
LE2	3.478	1.691	1.300	0.295	0.701
LE3	3.913	1.856	1.362	0.429	0.472

Note.
Summary for scale: Mean=5.71429 Std.Dv.=1.81806
Cronbach alpha: .598407 Standardized alpha: .620323
Average inter-item corr.: .361471
LE = leadership

Table D15

Love Reliability Table

Variable	Mean if deleted	Var. if deleted	StDv. If deleted	Itm-Totl Correl	Alpha if deleted
L1	3.503	2.002	1.415	0.519	0.681
L2	3.770	2.314	1.521	0.558	0.634
L3	3.559	2.060	1.435	0.576	0.603

Note.
Summary for scale: Mean=5.41615 Std.Dv.=2.05718
Cronbach alpha: .726169 Standardized alpha: .730409
Average inter-item corr.: .475238
L = love

Table D16

Love of learning Reliability Table

Variable	Mean if deleted	Var. if deleted	StDv. If deleted	Itm-Totl Correl	Alpha if deleted
LL1	5.720	4.549	2.133	0.252	0.831
LL2	4.677	2.393	1.547	0.645	0.375
LL3	4.435	2.122	1.457	0.676	0.319

Note.
Summary for scale: Mean=7.41615 Std.Dv.=2.43043
Cronbach alpha: .684111 Standardized alpha: .659723
Average inter-item corr.: .426428
LL = love of learning

Table D17

Perseverance Reliability Table

Variable	Mean if deleted	Var. if deleted	StDv. If deleted	Itm-Totl Correl	Alpha if deleted
P1	3.677	1.759	1.326	0.665	0.762
P2	3.720	1.804	1.343	0.664	0.762
P3	3.783	1.971	1.404	0.699	0.733

Note.
Summary for scale: Mean=5.59006 Std.Dv.=1.95727
Cronbach alpha: .819495 Standardized alpha: .822409
Average inter-item corr.: .607230
P = perseverance

Table D18

Perspective Reliability Table

Variable	Mean if deleted	Var. if deleted	StDv. If deleted	Itm-Totl Correl	Alpha if deleted
PE1	4.012	1.466	1.211	0.640	0.548
PE2	4.658	2.635	1.623	0.377	0.821
PE3	4.261	1.820	1.349	0.704	0.465

Note.
Summary for scale: Mean=6.46584 Std.Dv.=1.98441
Cronbach alpha: .730629 Standardized alpha: .728878
Average inter-item corr.: .495509
PE = perspective

Table D19

Prudence Reliability Table

Variable	Mean if deleted	Var. if deleted	StDv. If deleted	Itm-Totl Correl	Alpha if deleted
PR1	4.211	2.825	1.681	0.430	0.763
PR2	4.317	2.303	1.518	0.575	0.592
PR3	4.429	2.593	1.610	0.639	0.528

Note.
Summary for scale: Mean=6.47826 Std.Dv.=2.26132
Cronbach alpha: .720974 Standardized alpha: .725771
Average inter-item corr.: .477456
PR = prudence

Table D20

Self-regulation Reliability Table

Variable	Mean if deleted	Var. if deleted	StDv. If deleted	Itm-Totl Correl	Alpha if deleted
SR1	5.602	2.749	1.658	0.509	0.564
SR2	6.503	3.728	1.931	0.419	0.667
SR3	5.509	3.057	1.749	0.556	0.495

Note.
Summary for scale: Mean=8.80745 Std.Dv.=2.48876
Cronbach alpha: .676596 Standardized alpha: .678019
Average inter-item corr.: .414960
SR = self-regulation

Table D2*1*

Social Intelligence Reliability Table

Variable	Mean if deleted	Var. if deleted	StDv. If deleted	Itm-Totl Correl	Alpha if deleted
SI1	4.478	1.852	1.361	0.661	0.413
SI2	4.068	2.126	1.458	0.498	0.624
SI3	4.075	2.168	1.473	0.400	0.751

Note.
Summary for scale: Mean=6.31056 Std.Dv.=2.00698
Cronbach alpha: .696887 Standardized alpha: .701264
Average inter-item corr.: .449675
SI = social intelligence

Table D22

Spirituality Reliability Table

Variable	Mean if deleted	Var. if deleted	StDv. If deleted	Itm-Totl Correl	Alpha if deleted
S1	6.236	7.410	2.722	0.804	0.881
S2	5.696	6.473	2.544	0.832	0.856
S3	5.634	6.555	2.560	0.820	0.865

Note.
Summary for scale: Mean=8.78261 Std.Dv.=3.84008
Cronbach alpha: .908043 Standardized alpha: .909271
Average inter-item corr.: .770021
S = spirituality

Table D23

Teamwork Reliability Table

Variable	Mean if deleted	Var. if deleted	StDv. If deleted	Itm-Totl Correl	Alpha if deleted
TW1	3.882	1.769	1.330	0.414	0.631
TW2	3.857	1.886	1.373	0.493	0.519
TW3	3.963	1.812	1.346	0.489	0.521

Note.
Summary for scale: Mean=5.85093 Std.Dv.=1.87487
Cronbach alpha: .652347 Standardized alpha: .656841
Average inter-item corr.: .390752
TW = teamwork

Table D24

Zest Reliability Table

Variable	Mean if deleted	Var. if deleted	StDv. If deleted	Itm-Totl Correl	Alpha if deleted
Z1	5.211	3.160	1.778	0.671	0.732
Z2	5.006	2.925	1.710	0.578	0.831
Z3	4.839	2.732	1.653	0.742	0.649

Note.
Summary for scale: Mean=7.52795 Std.Dv.=2.46491
Cronbach alpha: .809516 Standardized alpha: .813837
Average inter-item corr.: .601600
Z = zest

Appendix E

Spearman Correlations for all Variables

Variable	TP		JD		OS		IF		AB		B		C		CU		FA		F		G		H		HO		HU		HM	
TP	—																													
JD	.53	***	—																											
OS	.24	**	.37	***	—																									
IF	.33	***	.33	***	.40	***	—																							
AB	.20	*	.29	***	.23	**	.23	**	—																					
B	.14		.27	***	.22	**	.33	***	.22	**	—																			
C	.11		.32	***	.20	*	.24	**	.26	**	.37	***	—																	
CU	.13		.34	***	.29	***	.25	**	.29	***	.34	***	.60	***	—															
FA	.41	***	.28	***	.28	***	.39	***	.27	***	.34	***	.20	*	.16	*	—													
F	.12		.14		.12		.19	*	.20	*	.12		.15		.22	**	.18	*	—											
G	.19	*	.30	***	.38	***	.35	***	.39	***	.19	*	.25	**	.39	***	.40	***	.39	***	—									
H	.49	***	.45	***	.19	*	.35	***	.12		.45	***	.25	**	.26	***	.45	***	.23	**	.26	**	—							
HO	.28	***	.34	***	.41	***	.31	***	.27	***	.34	***	.38	***	.38	***	.37	***	.27	***	.54	***	.39	***	—					
HU	.23	**	.26	**	.12		.23	**	.15		.03		.07		.04		.24	**	.29	***	.32	***	.24	**	.26	***	—			
HM	.23	**	.12		.10		.28	***	.15		.37	***	.40	***	.31	***	.17	*	.08		.09		.24	**	.21	**	-.04		—	
J	.19	*	.27	***	.09		.20	*	.13		.22	**	.16	*	.12		.23	**	.23	**	.17	*	.35	***	.07		.16	*	.14	
K	.23	**	.17	*	.28	***	.57	***	.32	***	.30	***	.06		.18	*	.46	***	.28	***	.42	***	.24	**	.33	***	.21	**	.13	
LE	.31	***	.33	***	.38	***	.57	***	.27	***	.41	***	.33	***	.28	***	.48	***	.27	***	.44	***	.35	***	.44	***	.17	*	.27	***
L	.34	***	.23	**	.28	***	.36	***	.09		.29	***	.14		.23	**	.32	***	.18	*	.40	***	.41	***	.40	***	.05		.21	**
LL	.09		.10		.05		.13		.11		.14		.22	**	.33	***	.14		-.09		.07		.10		.07		.01		.09	
P	.52	***	.59	***	.30	***	.33	***	.14		.30	***	.23	**	.32	***	.38	***	.19	*	.34	***	.57	***	.40	***	.13		.22	**
PE	.18	*	.18	*	.19	*	.22	**	.18	*	.26	***	.41	***	.35	***	.14		.20	*	.17	*	.31	***	.28	***	.09		.28	***
PR	.23	**	.26	***	.07		.19	*	.08		.16		.13		.06		.24	**	.29	***	.25	**	.38	***	.17	*	.31	***	.16	*
SR	.15		.19	*	.02		.05		.06		.20	*	.05		.11		.13		.13		.11		.21	**	.20	**	.09		.14	
SI	.31	***	.23	**	.40	***	.47	***	.18	*	.34	***	.34	***	.31	***	.37	***	.19	*	.32	***	.35	***	.42	***	-.02		.37	***
S	.10		.15		.25	**	.15		.23	**	.14		.08		.16	*	.15		.34	***	.44	***	.11		.36	***	.25	**	.00	
TW	.22	**	.24	**	.31	***	.33	***	.11		.12		.23	**	.24	**	.44	***	.29	***	.47	***	.28	***	.43	***	.26	***	.11	
Z	.19	*	.36	***	.35	***	.14		.21	**	.29	***	.33	***	.47	***	.25	**	.33	***	.55	***	.27	***	.60	***	.10		.23	**

	J		K		LE		L		LL		P		PE		PR		SR		SI		S		TW		Z
TP																									
JD																									
OS																									
IF																									
AB																									
B																									
C																									
CU																									
FA																									
F																									
G																									
H																									
HO																									
HU																									
HM																									
J	—																								
K	.19	*	—																						
LE	.24	**	.56	***	—																				
L	.20	*	.37	***	.31	***	—																		
LL	.16	*	.17	*	.11		.12		—																
P	.26	***	.29	***	.37	***	.40	***	.08		—														
PE	.31	***	.17	*	.31	***	.17	*	.33	***	.17	*	—												
PR	.61	***	.21	**	.36	***	.13		.04		.34	***	.31	***	—										
SR	.15		.02		.12		.06		.09		.30	***	.08		.24	**	—								
SI	.13		.45	***	.45	***	.40	***	.08		.43	***	.40	***	.17	*	.10		—						
S	-.04		.23	**	.22	**	.18	*	-.13		.18	*	.07		.03		-.03		.19	*	—				
TW	.17	*	.33	***	.39	***	.31	***	.10		.31	***	.18	*	.28	***	.16	*	.30	***	.27	***	—		
Z	.04		.21	**	.29	***	.27	***	.04		.41	***	.23	**	.10		.31	***	.37	***	.23	**	.31	***	—

*Note. * p < .05, ** p < .01, *** p < .001*

Appendix F

Best Subsets Regression Summary Tables

Table F1

Best Subsets Regression Summary for Job Dedication

Variable	Std. b	Std.Err. of std. b	b	Std.Err. of b	t(156)	p-value	#
Intercept			0.3986	0.1455	2.74	<0.01	
AB	0.2066	0.0591	0.1470	0.0420	3.50	<0.01	20.
HU	0.1253	0.0604	0.0901	0.0434	2.07	0.04	5.
J	0.1476	0.0606	0.1328	0.0545	2.44	0.02	16.
P	0.5207	0.0612	0.4323	0.0508	8.50	<0.01	20.
C	Excluded						2
CU	Excluded						2
K	Excluded						2
Z	Excluded						2
SD	Excluded						1
H	Excluded						1
HO	Excluded						1
HM	Excluded						1
LE	Excluded						1
L	Excluded						1
LL	Excluded						1
PR	Excluded						1
SI	Excluded						1
S	Excluded						1
TW	Excluded						1
B	Excluded						0
FA	Excluded						0
F	Excluded						0
G	Excluded						0
PE	Excluded						0
SR	Excluded						0

Note. R= .695 R2= .484 Adjusted R2= .47 CV-RA2=0.45
= number of times a variable was included in the best 20 models. AB = appreciation of beauty and excellence; B = bravery; C = creativity; CU = curiosity; FA = fairness; F = forgiveness; G = gratitude; H = honesty; HO = hope; HU = humility; HM = humour; J = judgement; K = kindness; LE = leadership; L = love; LL = love of learning; P = perseverance; PE = perspective; PR = prudence; SR = self-regulation; SI = social intelligence; S = spirituality; TW = teamwork; Z = zest; SD = social desirability

Table F2

Best subsets regression summary for Interpersonal Facilitation

Variable	Std. b	Std.Err. of std. b	b	Std.Err. of b	t(156)	p-value	#
(*Intercept)*			0.2642	0.1271	2.08	0.04	
HU	0.1023	0.0598	0.0658	0.0385	1.71	0.09	1.
K	0.3378	0.0690	0.2717	0.0555	4.89	<0.01	20.
LE	0.2792	0.0697	0.2233	0.0557	4.01	<0.01	20.
SI	0.2090	0.0669	0.1514	0.0485	3.12	<0.01	20.
SD	Excluded						1.
AB	Excluded						1.
C	Excluded						1.
CU	Excluded						1.
FA	Excluded						1.
F	Excluded						1.
G	Excluded						1.
H	Excluded						1.
HO	Excluded						1.
HM	Excluded						1.
J	Excluded						1.
L	Excluded						1.
LL	Excluded						1.
P	Excluded						1.
PE	Excluded						1.
SR	Excluded						1.
S	Excluded						1.
TW	Excluded						1.
Z	Excluded						1.
B	Excluded						0.
PR	Excluded						0.

Note.
R= .698 R^2= .488 Adjusted R^2= .474 CV-RA2=0.45
# = number of times a variable was included in the best 20 models. AB = appreciation of beauty and excellence; B = bravery; C = creativity; CU = curiosity; FA = fairness; F = forgiveness; G = gratitude; H = honesty; HO = hope; HU = humility; HM = humour; J = judgement; K = kindness; LE = leadership; L = love; LL = love of learning; P = perseverance; PE = perspective; PR = prudence; SR = self-regulation; SI = social intelligence; S = spirituality; TW = teamwork; Z = zest; SD = social desirability

Table F3

Best subsets regression summary for Organisational Support

Variable	Std. b	Std.Err. of std. b	b	Std.Err. of b	t(156)	p-value	#
(*Intercept*)			0.8985	0.1285	6.99	<0.01	
HM	-0.1780	0.0692	-0.1067	0.0415	-2.57	0.01	8.
LE	0.2388	0.0732	0.1835	0.0562	3.26	<0.01	6.
SI	0.2904	0.0801	0.2020	0.0558	3.62	<0.01	20.
Z	0.2791	0.0739	0.1581	0.0418	3.78	<0.01	11.
HO	Excluded						12
TW	Excluded						12
AB	Excluded						3
G	Excluded						3
CU	Excluded						2
S	Excluded						2
SR	Excluded						1
SD	Excluded						0
B	Excluded						0
C	Excluded						0
FA	Excluded						0
F	Excluded						0
H	Excluded						0
HU	Excluded						0
J	Excluded						0
K	Excluded						0
L	Excluded						0
LL	Excluded						0
P	Excluded						0
PE	Excluded						0
PR	Excluded						0

Note.
R= .598 R^2= .357 Adjusted R^2= .341 CV-RA2=0.30
# = number of times a variable was included in the best 20 models. AB = appreciation of beauty and excellence; B = bravery; C = creativity; CU = curiosity; FA = fairness; F = forgiveness; G = gratitude; H = honesty; HO = hope; HU = humility; HM = humour; J = judgement; K = kindness; LE = leadership; L = love; LL = love of learning; P = perseverance; PE = perspective; PR = prudence; SR = self-regulation; SI = social intelligence; S = spirituality; TW = teamwork; Z = zest; SD = social desirability