

MASTER OF ARTS BY COURSEWORK AND RESEARCH REPORT IN THE FIELD OF
ORGANISATIONAL PSYCHOLOGY



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**Stakeholder perceptions of the job skills and job roles
required by Industrial psychologists in South Africa**

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Plagiarism Declaration

I, Lerato Valencia Kekana, declare that this research project (Ethics clearance number: MORG/19/021 IH) is my own, unaided work. It has not been submitted before for this or any other degree or for examination at this or any other university.

Signed: *LV. Kekana*

Date: 11/03/2024

Abstract

The Fourth Industrial Revolution and recent Covid-19 pandemic have brought large changes to the way work is defined and enacted, and these transitions have placed a unique demand on Industrial/Organisational Psychologists (IOPs) to help organisations and employees manage these workplace changes. This has further emphasised the need for the clarification and reassessment of the job roles and job skills required of Industrial/Organisational psychologists (IOPs) in South Africa. This study explored and compared the perceptions held by I/O psychology students and trainers (i.e., lecturers and supervisors) with regards to the job role and job skills required of IOPs in South Africa.

Based on the review of literature, an online survey was designed and distributed to a group of 60 (59.4%) I/O psychology students and 41 (40.6%) I/O psychology trainers ($n = 101$) who voluntarily completed the survey. The survey collected both quantitative and qualitative data and this was analysed using a combination of statistics and content analysis.

Both students and trainers in the sample emphasised the psychological and facilitative roles of IOPs in the workplace, with their facilitative functions taking precedence. Both groups distinguished IOPs from human resource practitioners based primarily on daily processes. Students rated most roles as significantly more important than trainers however both groups identified organisational development, employee wellbeing and work life, change management, training, psychological assessments, motivation and rewards, and research as the most important roles that IOPs fulfil in the workplace. There was agreement from both groups that the roles of IOPs would change at least moderately in the next five years.

With regards to the job skills required of IOPs, a degree of congruence was observed in the top five skills that both groups noted, which included the four key skills of critical thinking; responsibility and reliability; honesty and integrity; and communication. Students prioritised people management as their fifth top skill while trainers prioritised emotional intelligence. Both groups emphasised practical work experience as the most important skill to be adequately prepared for the workplace and also identified interpersonal, communication and social skills; emotional intelligence; problem-solving; analytical and critical thinking; boldness; and business acumen as important. The findings of the study provide greater insight and possible directions for education and training of IOPs in South Africa, although further research in a broader range of stakeholders is needed.

Keywords: industrial/organisational psychologist, job roles, job skills, Fourth Industrial Revolution, Covid-19, South Africa

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Stakeholder perceptions of the job skills and job roles required by Industrial psychologists in South Africa

Chapter One

Introduction

Chapter One of this research report will introduce the topic of this study by outlining the study's background and rationale as well as its aims and objectives, and will conclude with a summary of the chapters that will be presented in this research report.

Background and rationale

Industrial/Organisational (I/O) psychology is characteristically known for its scientific study of human behaviour, particularly within the work environment (APA, 2022). According to van Zyl et al. (2016), I/O psychology can be defined as "...a specialised field of professional practice aimed at diagnosing, understanding, predicting and managing human behaviour within work contexts" (p.9). Industrial/Organisational psychologists (IOPs) are therefore required to receive specialised training and knowledge in ethics and psychology and the varied applications of these to the workplace, where such knowledge is typically used to address and improve issues relating to the recruitment, performance, and development of employees (Cunningham, 2010; Oliveira, 2020). It is due to its varied applications that I/O psychology distinguishes itself from other related roles and functions within the workplace, with one such example of a related role being that of human resource practitioners (Gasser et al., 2004; Kline, 1996; Landers, 2019; Meyer, 1972; Strümpfer, 2007; van Zyl et al, 2016).

Gaining a clearer understanding of the professional roles played by IOPs in the workplace and the job skills they require to perform effectively has become increasingly important as work itself has become more complex and challenging to define (Oosthuizen, 2022; Rudolph et al., 2021). These shifts have posed a unique demand for IOPs who not only play the 'change agent' role in the workplace, but also aid in the demarcation, management, and maintenance of work as a concept (Aamodt, 2013; Aycan, 2000; Cascio, 2001; Ghislieri et al., 2018; Wikis, 2014). Recent changes to the concept of work have also been triggered and further exacerbated by the unprecedented phenomenon of the Fourth Industrial Revolution (4IR), which has introduced a new level of connectivity and automation to work in terms of speed, range, and intensity (Lee et al., 2018; Schwab, 2016). This technological revolution is

also closely connected with the recent Covid-19 pandemic that resulted in massive job losses across the globe and challenged the relevance and importance of certain industries (Agbehadji et al., 2021; Di Crosta et al., 2021, Ivaldi et al., 2022; McKibbin & Fernando, 2020). Both of these phenomena have not only affected how, when, and by whom work is conducted, but they may also further influence and transform the job roles and job skills required of employees generally and IOPs in particular (Howard et al., 2017; Ohu & Dosumu, 2021). The nature of the work carried out by IOPs and their potential contribution to organisations and effective functioning in the workplace is changing, particularly in a context like South Africa that is lamentably known for its socio-economic inequalities, high youth unemployment rate, and challenges of diversity and transformation within the work environment (Pérez-Nebra et al., 2021). South Africa is consequently a unique context in which IOPs must function; therefore, exploring and better understanding the expected job roles and job skills of IOPs in South Africa reaches far past the point of curiosity to the reality of an overwhelming necessity (Chinyamurindi et al., 2021).

Given these changes to work and the challenges inherent in the South African context, the focus of exploration for this study creates an opportunity that allows for enhanced understanding and better conceptualisation of the training and registration guidelines and requirements for IOPs in South Africa. This type of knowledge may also help to better align expectations between industry, academics, and students; and could provide a stronger base for preparing I/O psychology graduates for the challenges that they will ultimately be employed to address in the workplace. However, for this to occur, a multidimensional approach must be employed where various relevant stakeholders are consulted to support and broaden understanding of the perceived job roles and job skills expected of IOPs in South Africa (Bryman, 2004; Kavanagh & Drennan, 2008; Sargeant, 2012).

Aims and objectives

The current study sought to identify perceptions of the job roles and job skills required by registered Industrial/Organisational psychologists in South Africa. Both I/O psychology university students and trainers (i.e. lecturers and supervisors/employers) were sampled to identify the similarities and differences between the perceptions held by these different stakeholder groups and to compare these. The data from the study could potentially provide valuable information that contributes towards a knowledge base about the roles

played by and skills needed by IOPs in the South African context. It could also form the basis for further research into how the training and development of IOPs in South Africa could be effectively improved to be better-suited for the current work environment. This study ultimately sought to highlight the existing perceptions and expectations that students and trainers hold with regards to the job skills and job roles that are required of IOPs in South Africa and how these insights could add value to the current literature and any future research relating to this field and profession within the South African context.

Structure of the report

Chapter One of this research report presents an introduction to and background for the study, the study's aims and objectives, as well as an outline of the structure of the report. Chapter Two provides a review of the existing body of literature relating to the key terms of the study and concludes with the study's research questions. In Chapter Three, the study's research design, instruments, procedure, ethical considerations, and data analysis will be discussed. Chapter Four will follow and will report on the results of the study. Finally, Chapter Five will discuss these results in light of the study's objectives, and will outline the key findings of this study, strengths and limitations, and recommendations for future research. This chapter will also present a conclusion to summarise the outcomes of this study.

Chapter Two

Literature Review

Chapter Two of this research report presents a review of existing literature on the topics relevant to this study. These include: Industrial/Organisational psychology, Industrial/Organisational psychologists, graduateness, skills for Industrial/Organisational psychologists, and the changing work context. The chapter then concludes with a summary of the focus of the current study and the research questions posed in the current study.

Introduction

The Covid-19 pandemic propelled and exacerbated the pace and effects of the emergent Fourth Industrial Revolution (4IR) (Akpan et al., 2020; Karr et al., 2020). This has brought into question and, in some cases, even destabilised, trusted roles and systems that guide and govern the world, such as education systems, the economy, and various established professional fields (Adebayo et al., 2020; Khoza, 2020; Mhlanga & Moloi, 2020; Vlados et al., 2021). The exponential nature of this revolution has consequently intensified the need for all professionals to appropriately revise and adjust their job skills and roles and to adapt accordingly or run the risk of becoming obsolete (van Loo et al., 2001; Xu et al., 2018). Industrial/Organisational psychologists (IOPs), who typically fulfil a ‘change agent’ role within organisations, are expected to be able to adequately equip and prepare organisations and their employees for the changes and demands arising from the broader environment whilst also ensuring that their own skills and roles are appropriately adjusted to perform these duties (Bapuji et al., 2021; Rudolph et al., 2021; Schreuder, 2001; Simms & Rivera-Nava, 2013). It is for this reason that it is particularly important to understand what the relevant job skills and roles of IOPs are, given the valuable role that they can play in the organisation of work and the implications thereof (Byrne, et al., 2014).

Although there is a considerable amount of literature that seeks to understand and explore the perceptions held by stakeholders with regards to the job skills and roles of various professions, much of this literature focuses on ‘technical’ industries such as accounting and engineering (Ellis, et al., 2014; Kavanagh & Drennan, 2008; Koko & Strydom, 2014; Maelah et al., 2012; Paadi, 2014; Rainsbury et al., 2002; Robinson et al., 2007; Taylor, 2016). Literature on this topic relating directly to the field of I/O psychology, though generally limited over the years, has recently gained some degree of interest, particularly in South

Africa (Barnard & Fourie, 2007; Chinyamurindi et al., 2021; Coetzee & Veldsman, 2022; Morelli et al., 2015; Riggio, 2013; van Zyl et al., 2016). Therefore, to provide a case, context, and foundation for this study; the literature review of this study will present a summary of relevant and existing research on this topic. This will be accomplished by highlighting the main ideas and findings relating to this topic, identifying gaps and inconsistencies in the literature, as well as presenting any apparent relationships between previous theoretical and empirical studies. To accomplish this, the following areas of literature will be discussed: Industrial/Organisational (I/O) psychology as a branch of psychology, the role and training criteria of IOPs, graduateness as a foundational concept, IOP skills, the changing work context and its influences, and, lastly, an overview of the focus of the current study.

Industrial/Organisational psychology

Industrial/Organisational psychology (also known as I/O psychology) is a sub-discipline of psychology that owes its inception to a specific time in the United States when psychologists began to use psychological principles to address work-related issues (van Vuuren, 2010). The American Psychological Association (APA), which is a scientific and professional organisation that represents psychologists in the United States, defines I/O psychology as “...the scientific study of human behaviour in organisations and the workplace” which “...focuses on deriving principles of individual, group and organisational behaviour and applying this knowledge to the solution of problems at work” (APA, 2022). The Health Professions Council of South Africa (HPCSA), which is the regulatory board for Industrial/Organisational psychologists (IOPs) in South Africa defines I/O psychology as “...the science and practice of professionals who function in organisational and occupational settings with an aim to ethically explain, assess and influence human behaviour and its reciprocity at individual, group and organisational levels, with all efforts directed at human flourishing and the sustainable development of all affected stakeholders” (HPCSA, 2019, p.3). I/O psychology’s distinct focus on human behaviour in the workplace means that this branch of psychology primarily concerns itself with the application of psychological theory and research to interpret and address workplace issues such as motivation, leadership, and assessment (Aamodt, 2013). Nevertheless, the populations that this discipline extends its applications to include and are not limited to prospective and organisational employees,

businesses at large, academia, labour relations bodies, and community and health organisations (APA, 2022).

Historically, I/O psychology as a field gained some momentum during the Second World War as expertise was needed for identifying the best methods to select military soldiers using assessments and to train them to use military equipment (Riggio, 2013). The war helped in the establishment of psychology as a profession and consequently I/O psychology thus its respective fields of practice began to emerge and flourish in the years that followed (Benjamin, 1986; Riggio, 2013). One example of an important contributor to the profession was Frederick W. Taylor, founder of the scientific management movement, who was not a psychologist by profession but whose ideas influenced the history of I/O psychology practice in the work environment (Kazi et al., 2013; Riggio, 2013; Uddin & Hossain, 2015). Taylor, whose contributions are often referred to as “Taylorism”, advocated for the application of scientific principles to achieve work efficiency and productivity by breaking down knowledge traditionally possessed by workers into rules and formulas (Taylor, 1911; Uddin & Hossain, 2015). A few other ‘founding fathers’ include: Robert Yerkes, who applied psychology to the recruitment of soldiers in the First World War, Walter Dill Scott’s application of psychology in advertising, and Hugo Munsterberg’s use of psychology in the workplace, all of whose contributions helped to advance the development of the field of I/O psychology (Campbell, 2002; Katzell & Austin, 1992; Landy, 1997). Since then, I/O psychology has come to consist of several sub-fields of inter-related theory and practice, including personnel psychology, career psychology, organisational psychology, ergonomics, consumer psychology, psychological assessments, employment relations, and employee wellbeing (Barnard & Furie, 2007; Riggio, 2013; Schreuder, 2001; Schreuder & Coetzee, 2010).

Career psychology, which is often inclusive of employee wellbeing, is primarily focused on career management and upholding the integrity of the psychological contract by optimising the expectations of both employer and employee and managing what each is willing to provide to the other (van Vuuren, 2010). Some of the areas that career psychology incorporates include career counselling, work-life balance, career agency, career orientations/interests, retirement planning, and mental health in the workplace (Schreuder & Coetzee, 2010; van Vuuren, 2010). Ergonomics, which is also known as engineering or human factors psychology, is concerned with the design of the interface between humans and machinery to ensure safety and comfort (van Vuuren, 2010). The aim is essentially to make

the environment compatible with human physiological and psychological skills and abilities (Howell, 1993; van Vuuren, 2010). Personnel psychology, which was the historical name for I/O psychology, is a subfield aimed at fitting the individual to a particular job or environment using the formal contract between employer and employee, which speaks to the employment relations role of the IOP (Flanagan, 1947; Ford et al., 1986; Rynes et al., 2005; Schreuder & Coetzee, 2010; van Vuuren, 2010). The activities of concern within this field include employee training and development, recruitment, performance evaluation, and assessment (Coetzee & Schreuder, 2010). Given the history and focus of personnel psychology, this subfield is arguably where role confusion between human resource practitioners (HRPs) and IOPs may stem from (Barnard & Furie, 2007).

Consumer psychology focuses on understanding and predicting consumer behaviour using psychology (Bettman, 1986; van Vuuren, 2010). This understanding can be approached from a physiological, cognitive, or social perspective and has implications for businesses and their clients/consumers (Cohen & Chakraverti, 1990; Kassarian, 1982). Lastly, organisational psychology, which has become the more prominent name for I/O psychology, is known for its contributions to the cultivation of workplace leadership, motivation, and satisfaction (Schreuder & Coetzee, 2010). Whereas personnel psychology places its focus on the individual, organisational psychology is concerned with how organisations influence the attitudes and behaviours of their employees (Schreuder & Coetzee, 2010). This subfield is arguably what distinguishes IOPs from HRPs in that it seeks to understand how the organisation functions as a whole (Coetzee & Schreuder, 2010).

As work environments continue to evolve, so does the role of I/O psychology and this has resulted in some of the subfields increasing, merging, or declining in their use and significance to industry (Schreuder, 2001; Schreuder & Coetzee, 2010). This has consequently influenced the range of roles that IOPs are most likely to carry out in the workplace.

Industrial/Organisational psychologists

The roles and functions that Industrial/Organisational psychologists (IOPs) in South Africa perform are primarily defined by the Health Professions Council of South Africa (HPCSA) guidelines which prescribe the training and scope of practice for these

professionals (HPCSA, 2019; HPCSA, 2020). South African IOPs registered under the Health Professions Act 56 of 1974 are guided by Rule 21 of the Ethical Rules of Conduct which delineates the areas in which they may safely, effectively, and lawfully practise given their training, skills, knowledge, and experience (HPCSA, 2019). There are two key acts that a registered IOP fulfils and the Health Professions Act, 1974 (Act no.56 of 1974) defines these acts as:

- (i) enhancing the behaviour and functioning of people, groups, and organisations to assist people pursuing meaningful and enriching work by applying psychological principles in the assessment, diagnosis, and intervention of human behaviour and to facilitate organisational flourishing; and (ii) intervening in issues of critical relevance to organisations, including career development, talent management, coaching, recruitment and selection, training, organisational development, organisational ergonomics and design, change management, organisational ethics, performance, potential, behavioural economics, wellness, occupational stress management and work -life balance (Government Gazette, 2018, p.6-7).

The APA further asserts that IOPs are science-practitioners who specialise in designing, implementing, and analysing psychological research and applying these findings in solving workplace issues (APA, 2013). Therefore, some of the workplace problems that IOPs address include coaching leaders and employees, identifying training needs, designing effective performance evaluation criteria, and optimising wellbeing and quality of life (APA, 2013). The South African College of Applied Psychology (SACAP; 2019) highlights six key business areas that IOPs will characteristically focus on in the workplace, namely: organisational development, employee training and development, ergonomics, work life, employee selection, and performance management, which may also be linked to employee compensation and benefits (Gupta & Saxena, 2022; SACAP, 2019). The Society for Industrial and Organisational Psychology of South Africa (SIOPSA), which is a non-profit member-based society for those involved in the fields of Industrial and Organisational psychology in South Africa, further suggests that given the need for diversity in the workplace, IOPs are required to possess extensive knowledge on both individual and cultural disparities, research methods relating to employment law (i.e., labour law), and test development (SIOPSA, 2023). IOPs are therefore trained to possess a deep understanding of

human behaviour and how to solve workplace issues efficiently and effectively (APA, 2022; SIOPSA, 2023).

From the existing literature, it is possible to compile a list of fifteen roles that are commonly associated with practicing as an IOP. These are: a) psychological assessment, b) training, c) recruitment and selection, d) research, e) counselling, f) organisational development, g) human factors/ ergonomics, h) compensation and benefits, i) labour law compliance, j) motivation and rewards, k) coaching, l) performance evaluation, m) marketing/ consumer satisfaction, n) employee wellbeing/ work life, and o) change management (Barnard & Furie, 2007; Brogaard, 2022; Brown, 2019; Cunningham, 2010; Government Gazette, 2018; Lefkowitz, 2003; Oliveira, 2020; Olowookere et al., 2020; Oosthuizen, 2022; Riggio, 2013; SACAP, 2019; Schaerer, 2012; Schreuder, 2001; Schreuder & Coetzee, 2010). Certain of these roles, such as recruitment and selection, labour law compliance, and compensation and benefits, overlap strongly with the work carried out by Human Resources practitioners (HRPs), while others, such as psychological assessment, research, and employee wellbeing and work life, are more strongly associated with the profession of I/O psychology (APA, 2013; Carless, 2009; van Vulpen, 2023). Training to become an IOP therefore often includes explaining the professional boundaries for each of these roles and developing and enhancing the skills needed to perform these roles effectively (Baloyi, 2012; Government Gazette, 2008).

IOPs typically receive their training from public or private colleges and universities where they cover a range of theoretical content such as psychology, organisational behaviour, research, statistics, motivation and work attitudes, group dynamics, workplace counselling, ethics, employment relations, psychometric assessments, employee wellbeing, and so forth (UCT, 2023; University of Sussex, 2023; Unisa, 2023; UWA, 2023; UWC, 2023; Wits, 2023). Consequent to the scope, nature, and implications of the roles that IOPs fulfil, these professionals are guided and governed by ethical and professional standards which are characteristically set and regulated by the professional board of the state or country in which they intend to practice e.g., the American Board of Organizational and Business Consulting Psychology (ABOBCP), the Canadian Psychological Association, or the British Psychological Society (BPS) (Perry, 2022; Smith, 2023; University of London, 2023; Waring et al., 2008).

In South Africa, IOPs are registered with the Psychology Board under the Health Professions of South Africa (HPCSA) – a statutory body which gives oversight to the education, training, and registration of all health professionals registered under the Health Professions Act (HPCSA, 2023). The HPCSA is chiefly guided by the Health Professions Act 56 of 1974 which outlines the scope of all registered professions as well as the processes that the HPCSA adheres to with regard to regulating professionals and maintaining its statutory mandate (HPCSA, 2023). To practice as a registered IOP in South Africa, a candidate generally has to acquire a three-year undergraduate degree with Industrial/Organisational psychology as a final year major. The candidate is then expected to supplement this by qualifying for and completing a one-year Honours degree and ultimately a one or two-year Masters degree in Industrial/Organisational psychology (Erffmeyer & Mendel, 1990). Furthermore, the HPCSA requires candidates to register as an Industrial/Organisational Psychology student during their Masters degrees before they can later register for and complete an Industrial/Organisational psychology internship (HPCSA, 2019; Shoenfelt et al., 2012). For the internship to be accepted by the HPCSA, both the academic and internship training institution have to be accredited by the HPCSA and the candidate has to be supervised by registered IOPs from both institutions (HPCSA, 2019). Finally, the candidate is required to apply for and write their Professional Board examination, where success results in registration with the HPCSA and a qualification to practice as a registered IOP in South Africa (HPCSA, 2020). Registration with the board must be maintained annually through the completion of sufficient CPD points and payment of the annual registration fee (HPCSA, 2020). The journey to qualifying, registering, and practicing as an IOP may consequently take approximately six to eight years - depending on the student, their institution of study, and country of practice.

IOPs practising in the workplace typically adopt various titles which include, but are not limited to, those of recruiter, performance manager, trainer, assessment administrator and interpreter, researcher, coach, strategic advisor, internal/external consultant, agent of change, problem solver, workplace counsellor, agent of individual development, strategic manager, reconciliation facilitator, educator, coach, strategic and operational human resource planner, and leadership developer (Barnard & Fourie, 2007; Brogaard, 2022; Brown, 2019; Lefkowitz, 2003; Olowookere et al., 2020; Oosthuizen, 2022; Schreuder, 2001). The American Psychological Association also highlights a few roles for IOPs to fulfil which included coaching, formulating and implementing training programs, designing and optimising quality of work, evaluating employee performance, and assessing consumer preferences and

satisfaction (APA, 2020). The Health Professions Council of South Africa identifies roles such as: strategic advisor/ manager, change management consultant, training and development officer, employee wellness consultant, organisational development consultant, performance manager or evaluator, selection and assessment consultant, career coach, training specialist, recruitment specialist, reconciliation facilitator, and industrial relations specialist (HPCSA, 2019).

As seen above, many of the functions and activities performed by IOPs can overlap with those of human resource practitioners (HRPs), and it often becomes challenging to distinguish IOPs as professionals who carry out work that is unique and yet complementary to that of HRPs (Olenick et al., 2018; Organizational Psychology Degrees, 2023b; van Zyl et al., 2016). A probe into public perspectives suggests that the role of IOPs is only clear to some – particularly those who govern or practice the profession (APA, 2022; Organizational Psychology Degrees, 2023b; SACAP, 2019; Smith et al., 2023). Although some studies have argued that the difference between the two is seemingly small and insignificant, the general consensus is that IOPs and HRPs are distinct from each other (Bernthal, 2023; Carless et al., 2009; Donald & Bleekers, 2012; Greenwood, 2017; Greenwood, 2018; Indeed, 2023; Smith et al., 2023; Smith-Barry, 2021). van Vulpen (2023) defines Human Resource Management (HRM) as managing people to optimise performance and identifies seven basic roles of HRPs, namely: learning and development, recruitment and selection, succession planning, performance management, compensation, and benefits. Schaerer (2012) argues that IOPs exist to fulfil the role of diagnosing and intervening on organisation-related issues in a manner that HRPs are not necessarily equipped to, and that they can apply behavioural sciences to human resources through the following roles: goal specification, assessment, development, communication, intervention, and evaluation. Carless et al. (2009) found that IOPs were significantly more knowledgeable about research in training and development, recruitment and selection, management practices, general employment practices, and compensation and benefits in comparison to their HR counterparts. Augustyn and Cillie (2008) further advocate that IOPs fulfil the role of both scientist and practitioner, in that they are not merely silent onlookers but also role players in their area of expertise.

Discussion around the role and relevance of I/O psychology and the identity of the profession has been under scrutiny since its inception, particularly in relation to obtaining recognition and distinction as a branch of psychology (Avedon & Grabow, 2010; Costanza & Jensen, 2010; Cunningham, 2010; Gasser et al., 2004; Kline, 1996; Landers, 2019; Meyer, 1972;

Morelli et al., 2015; Ryan & Ford, 2010; Strümpfer, 2007). This has further been exacerbated by I/O psychology's association with business and commerce fields of study and the lack of IOPs in academia contributing to the development and maintenance of I/O psychology as a profession (Gasser et al., 2004; Lawler et al., 1971; UJ, 2024; Unisa, 2023). Neglect in these areas has arguably contributed to the overlaps and role confusion between other business and human resource management roles that is prevalent in real-world settings (Aamodt, 2013; Organizational Psychology Degrees, 2023b; Ryan, 2003; SACAP, 2020; van Zyl et al., 2016). A recent study conducted by the Society for Human Resource Management investigated the degree of awareness and familiarity that the HR community has with I/O psychology and found that only 8.5% of participants were "very familiar" with I/O psychology and 22.6% of participants had never heard of the field and/or profession (Smith et al., 2023). Participants who did know about I/O psychology primarily gained their exposure to the field and profession through education programs (53.8%), professional events/conferences (38.9%), and research or popular press articles (26.4%). This is all despite the very close association and interaction between the two professions in successfully addressing work-related problems (Smith et al., 2023).

Too often the role of I/O psychologists is reduced to Human Resource Managers (HRM's) or is simply unclear, and it would appear that it is for this reason that Barnard and Furie (2007) conducted a study in which they explored perceptions of the role and contributions of IOPs in the workplace. Their study found that even though IOPs have much value to add in the dimensions perceived to be important by business, this value can only be appreciated if it is defined within the accepted business discourse. They also found that the propensity by business to employ IOPs in traditional HR practitioner roles instead of the specialised category of an IOP role hindered their contributions and impact (Barnard & Furie, 2007). Gasser et al. (2004) argue that if IOPs truly want to see their field of expertise getting the platform and recognition that it deserves, they must strive towards dispelling some of the many misconceptions that exist about their field and the significance of the work that they do. Yet another challenge for I/O psychology is striking a healthy balance between theory and practice (Augustyn & Cillié, 2008; Moyo, 2012; Rynes, 2012). Rynes (2012) further argues that some of the reasons for this include: a lack of awareness with regards to the need and use of research, a lack of confidence in research output, and a lack of implementation of research-based findings. They also suggest that these issues can be addressed by collaboration between

academics and practitioners, effectively teaching research and contextualising research for practical implementation (Rynes, 2012).

Irrespective of the degree of clarity or confusion associated with IOPs in the workplace, employers maintain certain expectations of new I/O psychology graduates with respect to the knowledge and skills that they anticipate and expect. More generally, employers tend to have certain expectations associated with graduates regardless of their field or degree of study and this phenomenon is commonly referred to as ‘graduateness’ (Steuer, et al., 2012).

Graduateness

A majority of the preparation that South African I/O psychology students undergo to obtain registration with the Health Professions Council of South Africa (HPCSA) and ultimately practice as IOPs is undertaken in a higher education institution (HEI) (Cooper & Nicholas, 2012; HPCSA, 2019). This is also true for many other fields and career paths; hence it is often assumed that all university education has a shared essence. The concept of ‘graduateness’ attempts to account for what this shared essence is (Steuer et al., 2012). Graduateness refers broadly to the generic growth and development of attributes (skills, knowledge, and abilities) across disciplines and institutions which graduates are expected to have acquired by the end of their university degree (Barrie, 2012; Glover et al., 2002; Steuer et al., 2012). Steuer et al.’s (2016a) study, which explored the perceived intellectual development of master’s students, affirms that formal graduateness (i.e., graduation) is not necessarily a prerequisite for actual graduateness (i.e., reaching a specific stage of intellectual development); instead, students may acquire at least a minimal level of graduateness before the actual completion of all their programme units. Furthermore, as Stevenson (2003) argues, these generic attributes are situated within a specific context and it is the context and the combination of generic attributes with ‘other’ forms of knowledge that makes these otherwise static attributes dynamic.

Other important factors to consider when discussing graduateness include the higher education system and changing student profiles and demographics (Makhanya, 2012). Makhanya (2012) states that failure to acknowledge these key influences on our understanding of graduateness is likely to lead to a discord between lived student realities and educator assumptions and practices. This seems to further suggest that graduateness is not a static concept but rather variable depending on the state of these key influences.

Graduateness is, in effect, more than merely equipping students with a set of skills that they can utilise at their place of employment; rather graduateness suggests that universities have a formative function in terms of helping students to reach a common stage of intellectual development where reflective abilities are cultivated (Steuer et al., 2012). Graduateness thus implies that HEIs have a crucial role to play in the development of graduates, and that it is the regard and relevance that HEIs and educators place on graduateness that influences the levels of capability and competence that students are enabled to reach by the end of their education (Bernstein & Osman, 2012; Steuer et al., 2016b). Graduateness may also be seen as context dependent, given that no HEI is exactly the same; and, as far as the South African context is concerned, graduateness makes no reference to students possessing field-specific or work-related knowledge but rather references having the ability to address local and global issues (Bernstein & Osman, 2012).

Despite the fact that graduateness skills are associated with employability skills and that graduateness typically precedes and may lead to employment, graduateness does not guarantee employment nor should it be equated with the concept of employability (Chetty, 2012; Coetzee & Schreuder 2013; Harvey & Knight, 2005; Mentz et al., 2019). Whereas it is assumed that graduateness is developed through the course of completing a degree, employability may or may not be cultivated during the acquisition of that degree (Glover et al., 2002). Furthermore, employability is not merely a graduate's ability to secure employment, but rather their ability to attain, retain, and develop in their place of employment (Harvey & Knight, 2005). This view of employability infers the long-term value and resilience of graduates in the workplace, such that both the employer and the graduate are well rewarded by each other (Rich, 2015). Moreover, employability is not limited to employment with a single employer but rather refers to an individual's ability to adapt and negotiate their skills to meet workplace needs in a changing world (Bagshaw, 1997).

Although 'graduateness' remains distinct from the concept of 'employability', a study by Coetzee (2011) found that students' self-perceptions of employability were highly associated with their self-perceived graduateness and that students' graduateness attributes were predictors of their employability attributes (as cited in Coetzee, 2012). Coetzee (2012) also lists graduateness skills and attributes, including: interactive skills, problem-solving/decision-making skills, continuous learning orientation, enterprising skills, presenting and applying information, goal-directed behaviour, ethical and responsible behaviour, and analytical thinking skills. These are somewhat similar to the employability skills that Weligamage

(2009) argues most studies agree to be core skills that are not degree-dependent, namely teamwork, problem solving, communication skills, critical/analytical skills, self-management skills, continuous learning abilities, risk-taking, flexibility, and adaptability.

The Graduate Attributes Survey (GAS), which was developed between 1995 and 1996 by the Curtin University of Technology, was developed to assess the perceived quality of Curtin graduates by employers by comparing their skills and competencies with those of students from other universities (Liston, 1998). The survey was found to have consistently evaluated students against four main attributes, namely: writing skills, the ability to critically evaluate, time management, and an awareness of relevant national and international issues (Liston, 1998). Although useful, the survey had a number of limitations to which Liston (1998) proposed improvements. These included an indication of the importance level of each skill/attribute, employer input on the list of attributes, and input on how each skill/attribute could be improved. Nevertheless, even with these changes this measurement remains restricted in that its use and application is primarily directed towards graduates of the Curtin University of Technology (Liston, 1998).

More recently, the Graduate Skills and Attributes Scale (GSAS) was developed and serves as an example of a measurement that has been used and developed to assess the attributes and skills that are generally expected of graduates (Coetzee, 2012; Griesel & Parker, 2009). According to Coetzee (2014), the GSAS was developed as a tool that measures eight core gradueness skills under three broad but holistic domains of scholarship, life-long learning, and global and moral citizenship. Scholarship refers to the attitude or stance that graduates have towards knowledge (inclusive of analytical thinking, enterprising, and problem solving and decision-making skills) (Barrie, 2012; Coetzee, 2014). Life-long learning refers to the stance of graduates towards themselves (includes continuous learning orientation and goal directed behaviour) (Barrie, 2012; Coetzee, 2014). Lastly, global and moral citizenship (which accounts for interactive skills, ethical and responsible behaviour, and presenting and applying information skills) is defined as the stance of graduates with regards to their role in the community and the world at large i.e., their attitude towards the world (Barrie, 2012; Coetzee, 2014). Steur et al. (2016b) went on to include an additional domain in their study, which they referred to as reflective thinking; this encompasses an ability to make judgements on complex and/or unfamiliar situations by reflecting, translating, and integrating knowledge. While Coetzee (2014) includes analytical thinking under the domain of scholarship, Steur et al. (2016b) distinguish between these two where scholarship refers to scholarly attitudes and

research skills mastery and reflective thinking refers to a higher-ordered level of thinking. Ultimately, the study found that the emphasis placed on each of these domains may differ in terms of the study programme or university department in which a graduate is enrolled (Steur et al., 2016b).

Given that gradueness incorporates skills and attributes that are considered generalisable to graduates regardless of their disciplines or institution, it forms an important foundation for identifying and distinguishing the skills that I/O psychology graduates are expected to have and demonstrate within the work environment (Barrie, 2012; Steur et al., 2016b).

Furthermore, in the event that the skills required of IOPs are distinct from those accounted for under the broader concept of gradueness, this could have direct implications for the training and course content development of I/O psychology training programmes.

As gradueness has its roots in HEIs and has implications for the government and employers, the need for collaboration and regulation in these institutions to ensure that students from all backgrounds are adequately equipped to help meet local and global demands of their respective generations and professions becomes apparent (Green et al., 2009; Griesel & Parker, 2009; Succi & Canovi, 2020; Wheelahan, 2010). This is particularly important in a country like South Africa that has a history of segregated training and education as well as a contemporary crisis of a high graduate unemployment rate (Chetty, 2012). Gradueness on its own is not sufficient for students to thrive in a highly flexible and competitive global environment however it does form an important basis from which to develop career-specific skills that inform both employability and competence (Glover et al., 2002; Steur et al., 2016b).

Skills and competencies for Industrial/Organisational psychologists

The concept of “skill” is one that many scholars have deemed to be complex, ambiguous, and even elusive (Attewell, 1990; Boucher, 2020; Grugulis & Vincent, 2009). Although a skill is generally understood to be the ability to do something well, further interrogation of this understanding makes the complexity of the term all the more apparent (Attewell, 1990). The variability of the concept is also partly a consequence of a multitude of factors such as globalisation, technological advancements, the political climate, economic, demographic, and environmental changes which further influence their scope, definition, and relevance (Bakhshi et al., 2017; Boucher, 2020; Rigby & Sanchis, 2006). Furthermore,

various disciplines such as psychology, economics, philosophy, sociology, and education also employ different approaches in their efforts of grappling with and somewhat defining the term ‘skill’ (Attewell, 1990; Stanley & Williamson, 2017).

The American Psychological Association (APA) Dictionary of Psychology defines a skill as “an ability or proficiency acquired through training and practice.” (APA, 2018a). Similarly, for Katz (1974), a skill is defined as an ability that one may not necessarily be born with but rather one that is developed and made apparent in performance and not just potential. Katz (1974) further notes that there are three basic skills, namely: technical skills, human skills, and conceptual skills. A technical skill implies specialised knowledge and analytical ability within a specific discipline that is displayed by a proficiency and understanding of a specific activity that usually involves special techniques, processes, and procedures (Katz, 1974).

Therefore, a technical skill is more concrete and focuses on working with ‘things’ whereas a human skill has a primary concern for people and implies an element of emotional intelligence (EQ) in that an individual possessing this ability is self-aware and appropriately manages their relationships with others (Goleman, 1998; Katz, 1974). A conceptual skill is one where the individual has the ability to perceive and make decisions based on the interdependence and interconnectedness of various functions within and outside of the organisation. Another perspective of the notion of a skill is offered by Peterson and van Fleet (2004) who define a skill as the ability to perform a specific cognitive process or behavioural task. They also suggest that skills have three components, namely: a) a domain-specific knowledge-base; b) a method of assessing this knowledge-base; and c) an ability to retrieve knowledge from a domain-specific knowledge-base and use this knowledge to perform a task – and it is at this level that the skill is observed (Peterson & van Fleet, 2004).

Another concept that is similarly hard to define and that is often used interchangeably with ‘skills’ is competence, and the APA Dictionary of Psychology defines this as:

one’s developed repertoire of skills, especially as it is applied to a task or set of tasks. A distinction is sometimes made between competence and performance, which is the extent to which competence is realized in one’s actual work on a problem or set of problems (APA, 2018b).

The Merriam-Webster dictionary defines competence as “the quality or state of being competent: such as the quality or state of having sufficient knowledge, judgment, skill, or strength (as for a particular duty or in a particular respect)” (Merriam-Webster, n.d., 1a).

In order for IOPs to fulfil their role in the workplace, the Society for Industrial and Organizational Psychology (SIOP) recommends competencies (and skills) in the following areas: ethical, legal, diversity and international issues, knowledge in various fields of psychology, an understanding of history and systems of psychology, research methods, statistical methods/data analysis, and professional skills such as communication, business/research proposal development, consulting, and project management skills (Society for Industrial and Organizational Psychology, 2016). These competencies are largely echoed in the top six competencies that Brannick (2014) identifies as necessary for psychology practice globally, namely: “...(1) knowledge (e.g., fields of psychology, history and systems of psychology, attitude change, individual differences); (2) ethics and legal (e.g., employment laws, professional standards, licensure laws); (3) professional practice (e.g., assessment, consulting); (4) relationships (e.g., group facilitation, interpersonal skills); (5) professionalism (e.g., attitudes, conduct); and (6) cultural diversity (e.g., countries, regions, demographic groups)” (Brannick, 2014, pp.55-56).

The first three of Brannick’s (2014) areas of competence are further supported by Steiner’s (2013) study which found that the following skills were considered important by IOPs and I/O psychology supervisors: human resources related competencies such as employee selection, placement, and classification; statistical knowledge; research/ measurement skills including classic psychometric methods and test construction; and business skills such as project management, report writing, and making presentations (Steiner, 2013). A few other IOP skills that are also related to professional practice include: personnel and human resources management, administration, mathematical skills, and people management (MyMajors, 2023; O*NET Online, 2023; Universal Class, 2023). Columbia Southern University suggests that employers seek out IOPs who possess: problem-solving skills, coaching and leadership skills, interpersonal skills, recruiting and training skills, analytical skills, communication and listening skills, conflict resolution skills, and research skills (Columbia Southern University, 2023). Byrne et al. (2014) recommend that IOPs should also receive additional training in structure and strategy, accounting, and entrepreneurship so as to minimise the competitive advantage that organisational behaviour students have.

Competence in relationships and professionalism are generally considered to be important skills regardless of the profession or title that one holds in the workplace. Starr (2023) notes

that being friendly and professional in the workplace is important as it: 1) helps create a positive and productive environment where employees are more likely to be engaged in their work; 2) it aids in building relationships with colleagues and customers; and 3) it sends a message of reliability and competence such that the company image is enhanced and/or upheld. A study conducted by Knights (2015), which investigated the characteristics associated with the success of I/O psychology graduates, also found that agreeableness (consisting of a friendly disposition, sensitivity to others, and a collaborative work tendency) was reported by respondents as ‘helpful’ for being successful. However, Lauby (2018) argues that one does need to maintain a good balance between being friendly enough to establish rapport and valuable relationships as well as being professional and bold enough to set boundaries and get the job done. Furthermore, Smith (2008) asserts that when working in people management, particularly in the areas of recruitment and selection, workplace training, learning and development, organisational change and performance management – boldness is a necessity. Therefore, as leaders and drivers of change in the workplace, I/O psychologists require the qualities of being both friendly and bold to successfully fulfil their role in the workplace (Bersin, 2016; Burgess, 2023).

With further investigation, one finds that competencies for I/O psychologists that are related to relationships and professionalism are overwhelmingly advocated for. Harvard Extension School compiled a list of ten skills that are generally required for I/O psychologists to be successful in their role and the skills that includes: listening, problem solving, negotiation and persuasion, data analysis, writing and reading comprehension, business acumen, social skills, teaching and learning, management, and communication (Bakken, 2021). Similarly, the Florida National University also lists ten skills that they perceive all psychologists should have and these skills include: communication, patience, ethics, problem solving, research skills, commitment to learning, organisation, emotional stability, listening, and compassion (Florida National University, 2020). Other notable relational and professional skills include: critical thinking/analytical skills, teamwork, emotional intelligence, adaptability, compassion, and integrity (Organizational Psychology Degrees, 2023b; Psychology Jobs, 2023; Zippia, 2023). Finally, Kożusznik and Kożusznik (2012) argue that IOPs need to be able to effectively manage cross-cultural differences and support diversity; the competencies that they possess should include: creativity; empathy; cognitive flexibility; and relation competencies. To be more culturally adept at work, the American Management Association (AMA, 2022) generally advocates for emotional intelligence (particularly self-knowledge and

self-regulation), flexibility, and tolerance for ambiguity as essential skills. These skills are arguably crucial for IOPs' role in managing diversity, equity and inclusion (AMA, 2022; Skill Source Learning Partners, 2024; Sloyan, 2022). This cultural diversity competency also relates to the idea that context matters when identifying and applying the skills required of IOPs and this is largely attributed to the varying cultural, legal and professional contexts in which IOPs practice (Brannick, 2014).

For I/O psychology graduates in South Africa, the HPCSA's 'Minimum standards for the training of Industrial Psychology' (2019) lists nine minimum competencies or exit level outcomes that I/O psychology trainees need meet in order to qualify for registration with the HPCSA. These competencies include:

- A) Problem diagnostic and intervention planning: IOPs need to be able to identify organisational needs and to develop appropriate interventions to address these. They also need to be able to apply psychological techniques, analytical skills, and their knowledge of the work context to clearly define and communicate the goals and objectives of the proposed intervention (HPCSA, 2019).
- B) Intervention design: IOPs need to be able to apply their understanding of tests, assessment instruments, and the South African context to design and carry out client-centred interventions (HPCSA, 2019).
- C) Psychological assessment: IOPs need to be able to employ their knowledge of psychometric tools and assessments to assess, train, select, and refer individuals to the appropriate professionals (HPCSA, 2019).
- D) Professional practice: IOPs need to be able to implement comprehensive and person-centred interventions that address individuals' diagnosed needs and challenges in a way that causes no harm and that ensures effective organisational functioning (HPCSA, 2019).
- E) Research: IOPs need to be able to apply their knowledge of psychology and scientific techniques to determine feasibility and conduct research that is ethically and legally compliant and that contributes to psychological theory and practice (HPCSA, 2019).
- F) Communication and reporting: IOPs need to be able to communicate well verbally and in writing when giving presentations, client feedback, and writing reports. All communication needs to be managed in an ethical and confidential manner (HPCSA, 2019)

- G) Continuous professional development (CPD): IOPs need to commit to continuously developing and updating their skills, knowledge, and competencies in their profession. This includes managing their professional practice with regards to client needs/ services and their relationships with relevant professionals/organisations in accordance with relevant ethical standards and legislative frameworks (HPCSA, 2019).
- H) Ethics: IOPs need to ensure that their professional conduct adheres to the code of ethical and professional standards that determine the IOP scope of practice (HPCSA, 2019)
- I) Legislation: IOPs need to be able to use their knowledge of legislative frameworks to ensure equality, justice, fairness, and compliance (HPCSA, 2019).

Although these are competencies that the HPCSA has identified as foundational and crucial to the training and registration of IOPs in South Africa, it is important to note that this list of competencies may not necessarily reflect nor represent all of the skills that IOPs themselves consider important for their roles or the requirements that employers and their organisations may have of IOPs. For instance, a study by Cunningham and Villaseñor (2016) found that a discrepancy exists between the skill expectations of educators and employers.

Research on skills and competencies for Industrial/Organisational psychologists

To understand which competencies and experiences IOPs generally consider to be important to their role in the workplace, Zelin and colleagues conducted a series of studies first exploring the competencies and experiences of IOPs in entry level jobs in various sectors and then progressing to investigate this for IOPs in academia, industry, consulting and government across all job levels (Zelin et al., 2014; Zelin et al., 2015a; Zelin et al., 2015b; Zelin et al., 2015c; Zelin et al., 2015d).

In their study on competencies for entry-level IOP roles in academia, industry, consulting and government, Zelin et al. (2014) found that teamwork, communication skills, and successful project management were crucial for success in all sectors. What was however a surprising discovery for them was that ‘soft-skills’ such as teamwork instead of field-specific skills were associated with upward mobility and success (Zelin et al., 2014). Soft skills refer to non-technical, intangible, interpersonal and intrapersonal character traits and qualities that facilitate mastered performance in a specific context (Hurrell et al., 2013; Rego, 2017). They

are also otherwise referred to as ‘twenty-first century skills’ which IOPs are said to play a crucial role in assessing, particularly complex and collaborative problem-solving skills (De Fruyt et al., 2015; Neubert et al., 2015). Soft skills should, however, not be seen as an alternative to technical skills (which refer to the expertise used to deliver on specialised tasks within a specific area of work) but rather as complementary to them (Grugulis & Vincent, 2009; Matteson et al., 2016; Peterson & van Fleet, 2004).

The balance between these two skill sets is exemplified in how organisations today commonly make use of enterprise social media (ESM) such as Microsoft Teams and Yammer to facilitate and demonstrate soft skills such as collaboration and communication (Pitafi et al., 2020). The results of Pitafi et al.’s (2020) study found that ESM use is positively associated with employee agility (i.e., a soft skill) and that work expertise (i.e., a technical skill) positively strengthens this relationship. Moreover, a study by Ewing et al. (2019) discovered that social media played a significant role in facilitating and contributing to employee engagement. These findings could arguably advocate for the value and potential benefits of IOPs’ knowledge and use of social media in the workplace as another skill set (Coetzee & Veldsman, 2022; Crespín & Austin, 2002; Snyder & Cistulli, 2020).

In their next study, which was on the competencies of IOPs in academia across all job levels, Zelin et al. (2015a) found that the top five rated skills were: written communication; oral communication; research ability; integrity; and ethical behaviour. IOPs working in industry had critical thinking, verbal communication, ethical behaviour, interpersonal skills, and accountability as their top five competencies across all levels (Zelin et al., 2015b). The competencies for IOPs in consulting included: verbal communication, ethical behaviour, critical thinking, integrity, and trustworthiness (Zelin et al., 2015c). Finally, IOPs in the government sector had: integrity, ethical behaviour, written communication, critical thinking, and verbal communication as their key competencies (Zelin et al., 2015d). These findings demonstrate that while there is a high level of overlap between different sectors and areas of practice, there are also subtle differences that may be important for IOP training and development. It is also noteworthy that many of the skills identified can be classified as soft skills rather than technical skills.

Defining which skills are considered relevant or important for employees has never been an easy task, however this remains important given its implications for the workplace. For the employer, this is vital to ensure that workplace needs are met through employing

appropriately skilled employees, for the potential employee it is necessary that they possess skills that will ensure their employability, and for institutions of learning it is critical that they have staff and curricula that can facilitate the transfer and development of necessary skills (Bruett, 2006; Kaufman, 2013; Larson & Miller, 2011; Siekmann & Fowler, 2017). Varying studies have thus developed their own lists of soft skills that employers require of employees and van Laar et al. (2020) has highlighted some of the commonalities between these lists. This includes a focus on seven key soft skills (i.e., communication, problem-solving, critical thinking, information, creativity, information, collaboration, and technical skills) against eight determinants (i.e., cultural, demographic, social, socioeconomic, temporal, material, mental/motivational, and personality/psychological). The study found that each twenty-first century skill had a digital variant and that personality and psychological factors were significant determinants of these skills, particularly for collaboration, critical thinking, creativity, and problem solving skills (van Laar et al., 2020). A study done by Hurrell (2016) suggests that the soft skills gaps that exist today are not always due to employees lacking these skills but can rather be attributed to the low value and regard that organisations have placed on them over the years as well as some inadequacies in HR practices. However, employer perceptions of soft skills have changed, such that employers consider even technical roles such as IT (information technology) and engineering to require soft skills (Grugulis & Vincent, 2009). Robles (2012) carried out a study which explored business executives' perceived top ten soft skills and found that communication, courtesy, integrity, flexibility, work ethic, responsibility, social skills, professionalism, positive attitude, and teamwork were all perceived to be very important. More recently, a study conducted by Succi and Canovi (2020) on the relevance of soft skills in enhancing graduate employability found the most relevant soft skills to primarily include learning skills, results orientation, communication, and teamwork. Other important soft skills they identified included creativity, conflict management, ethical professional performance, networking, and adaptability; however, these varied depending on the stakeholder group in question i.e., students or employers (Succi & Canovi, 2020).

To explore organisational views on the skills of IOPs, Shoenfelt et al. (2012) compiled a list of twelve I/O psychology skills that they believed were necessary and should be further developed in a good internship. These included: ethical behaviour/integrity, professionalism, statistical analysis, data management, interpersonal sensitivity, time management, problem solving, general written communication, critical thinking, technical writing, oral presentation,

and organisational savvy (Shoenfelt et al., 2012). Although ethical behaviour/integrity, professionalism, and statistical analysis were the top-rated skills followed by data management, interpersonal sensitivity, and time management, it is important to note that all of the twelve skills were nonetheless regarded as essential to internship entry (Shoenfelt et al., 2012).

From the existing literature and previous empirical research, it is possible to compile a list of twenty-three skills that are commonly associated with practicing as an effective IOP. These are: a) time management; b) creativity; c) entrepreneurship; d) communication; e) people management; f) emotional intelligence (EQ); g) friendliness; h) tolerance; i) critical thinking; j) patience; k) honesty/ integrity; l) teamwork; m) flexibility; n) conflict management; o) mathematical skills; p) complex problem-solving skills; q) listening; r) compassion; s) boldness; t) leadership skills; u) negotiation skills; v) responsibility/ reliability; and w) social media use skills (AMA, 2022; Bakken, 2021; Bersin, 2016; Burgess, 2023; Byrne et al., 2014; Coetzee & Veldsman, 2022; Columbia Southern University, 2023; Crespín & Austin, 2002; Florida National University, 2020; HPCSA, 2019; Knights, 2015; Lauby, 2018; MyMajors, 2023; Organizational Psychology Degrees, 2023a; Psychology Jobs, 2023; Robles, 2012; Shoenfelt et al., 2012; Starr, 2023; Snyder & Cistulli, 2020; Society for Industrial and Organizational Psychology, 2016; Succi & Canovi, 2020; van Laar, 2020; Zelin et al., 2014; Zelin et al., 2015c; Zippia, 2023). It is also worth noting that most of these skills are not only associated with ‘graduateness’ and ‘employability skills, but also closely align with those identified by the Abu Dhabi Sustainability Week - Future Skills 2030 Report and the PEAK self-assessment (Burke, 2014; Coetzee, 2012; Liston, 1998; Weligamage, 2009; Youth 4 Sustainability, 2019). The Abu Dhabi Sustainability Week - Future Skills 2030 Report particularly mentions skills such as entrepreneurship, creativity, resilience, complex problem solving, emotional intelligence, teamwork, leadership, people management, new media literacy, and digital fluency (i.e., social media use skills) (Youth 4 Sustainability, 2019). Skills such as tolerance, patience, flexibility and confidence (boldness), communication, listening, conflict resolution, and analytical/interpretive (critical thinking) skills were also highlighted in the PEAK self-assessment (Griffith et al., 2014).

To interpret and categorise these skills, this study employs a skills model introduced by Beckhusen (1993), which has three skills categories, namely: transferable/functional skills, personal traits/attributes, and knowledge-based skills. The skills taxonomy model employed by Beckhusen (1993) is also utilised by SkillScan (2012a) and Kalyani (2019). In this model,

transferable/functional skills are described as being based on aptitude, obtained over time, transferable to varying work functions, and are best expressed in verbs e.g., analysing, writing, and organising (Beckhusen, 1993; Kalyani, 2019; SkillScan, 2012a). The skills included in the list above which fall into this category include: communication, listening, negotiation, creativity, entrepreneurship, people management, critical thinking, leadership, and complex problem solving. Personal traits/attributes are skills that are expressed through adjectives and that are acquired through life experiences e.g., independence, patience, and diplomacy (Beckhusen, 1993; Kalyani, 2019; SkillScan, 2012a). These include skills from the list above such as: emotional intelligence (EQ), tolerance, compassion, teamwork, conflict management, time management, flexibility, friendliness, patience, honesty/integrity, boldness, and responsibility/reliability. Lastly, knowledge-based skills, which mimic Katz's (1974) technical skills, are expressed through nouns and are imparted through education, training, and job experiences. This category primarily refers to knowledge that is specific to a subject, procedure or task e.g., accounting, business administration, and management (Beckhusen, 1993; Katz, 1974; SkillScan, 2012a). Skills in this category from the list above include: social media skills, and mathematics. Finally, employing aspects of the *Chart of Skill Categories, Skill Sets and Sample Career Options* provided by SkillScan (2012b) these skills categories can be further expanded into subcategories.

Although this list of skills is inclusive of the skills that various stakeholders have deemed to be foundational to the training and employment of IOPs; it is nonetheless important to note that due to the nature and context of I/O psychology, the role and skills required of IOPs are subject to constant and continuous changes that occur in the work environment.

Industrial/Organisational psychologists and the changing work context

The manner in which work has been defined, demarcated, and delivered has continuously evolved over the centuries (Attaran et al., 2019; Cascio & Montealegre, 2016; de Lucas Ancillo, et al., 2021). This change in understanding of how work is conceptualised and characterised can be attributed to a myriad of phenomena such as the evolving needs and abilities of humans, the fluctuating demands of the environment, as well as changing socio-economic and socio-political factors (Bonnin, 2023; Majid et al., 2019). Two large phenomena affecting the concept of work today are the Fourth Industrial Revolution (4IR)

and the recent Covid-19 pandemic (Ivaldi et al., 2022; Ross & Maynard, 2021; Schwab & Malleret, 2020; Vladoš & Chatzinikolaou, 2021).

The Fourth Industrial Revolution, which is now commonly known as the 4IR or Industry 4.0, is a concept coined by Klaus Schwab as a way of describing the rapid and disruptive waves that technological changes are having on society (Schwab, 2016). It refers to the accelerated automation and digitisation of work world-wide resulting in the introduction and use of technologies such as the Internet of Things (IoT), robotics, artificial intelligence (AI), 3D printing, and cloud computing (Rojko, 2017; Schwab, 2016). Automation and connectivity have often been the drivers of global innovation throughout the years and, as the name suggests, the 4IR is by no means the first adaptation that society has endured (Ivaldi et al., 2022). However, in comparison to the initial agricultural/agrarian revolution, which was, amongst other things, a transition from foraging to humans farming with animals, the current revolution surpasses it in terms of speed, intelligence, and impact (Bloem et al., 2014; Chappine, 2014; Schwab, 2017). This is also true for all other preceding revolutions where the first revolution, beginning in the 1760's, launched the mechanisation of production through the introduction of the steam engine; the second revolution, in the 1800's, focused on electricity-fuelled mass production; and, more recently, the third revolution in the 1960's, which brought with it the introduction of electronics and the digital automation of production (Bloem et al., 2014; Clark, 2019; Rojko, 2017). The 4IR is therefore unique in that it is a collusion of the first and the third revolution on an unprecedented scale, where the digital, biological, and physical spheres intercept (Li, et al., 2017; Morrar et al., 2017; Xu et al., 2018). This digital paradigm shift is consequently and considerably changing the nature, method, and location of work, placing a vocational demand on societies to either catch up or risk being left behind (Bonekamp & Sure, 2015; Spöttl & Windelband, 2021).

Regrettably, a systematic literature review performed by Attaran et al. (2019) found that most organisations are ill-equipped for and confused on how to successfully reap the benefits of a digital workplace. They further attest that this is consequent to organisations failing to prepare for this change by training their employees with new skills and adopting more integrated approaches to work (Attaran et al., 2019). Some of these 'new skills' include soft skills and although soft skills were historically overlooked, they are now among the most sought-after skills category following the 4IR (Grugulis & Vincent, 2009; Maisiri et al., 2019; Nasir et al, 2011; van Laar et al., 2020). This is especially due to the fact that many of them cannot be easily automated (Maisiri et al., 2019, Wilkie, 2019). Attaran et al.'s (2019)

claim is supported by the results of a study conducted by Deloitte on South Africa's manufacturing industry, which found that although there are opportunities for South African manufacturers to leapfrog their global competitors in the 4IR era, these businesses would have to be reorganised, develop new infrastructures, and upskill their workforce accordingly (Deloitte, 2016). The study also found that the role of Human Resources in Industry 4.0 needs to be re-imagined and redefined so as to cater for the new employee who is now required to be a continuous learner (Deloitte, 2016). Similarly, a study by Ivaldi et al. (2022) suggested that for organisations to be successful in these present times, they must embrace and embody a learning culture which will enable them to be agile, generate value, be visible, and be adaptable. For such a culture to be realised and maintained, organisations must prioritise talent management and accordingly amend their reward and performance evaluation methods by leveraging the use of data (Deloitte, 2016; Ivaldi et al., 2022).

Mayer and Oosthuizen (2020) conducted a study on how organisations can effectively transform to embrace the 4IR and found that there are five key themes for organisations to consider, where the first theme identified was about employee management (Mayer & Oosthuizen, 2020). Given that the 4IR has not only introduced abrupt changes to work and the workplace but has also brought with it a degree of fear and uncertainty amongst employees, organisations need to be consistent and transparent in their communication with employees regarding the changes and challenges that they will be affected by (Mayer & Oosthuizen, 2020). Following employee management, organisations equally need to effectively embrace innovative technologies and allow for certain aspects of their business to be automated whilst maintaining a balance between machine learning and human interaction (Mayer & Oosthuizen, 2020). Organisations also need to be mindful of the unique context in which these technological changes are being implemented as well as the consequent implications thereof. Africa, and South Africa in particular, is very unique and distinct from European and American contexts; therefore, 4IR processes that may play out as a benefit in these contexts could very well be a disadvantage for the South African context (Mayer & Oosthuizen, 2020). The fourth theme identified was work organisation, which refers to how the participants in the study highlighted the need for organisations to improve work speed, innovation, and effectiveness so as to thrive and remain competitive. Lastly, the results of the study emphasised the need for cooperation between organisations and academic institutions such that business innovations and solutions are guided and supported by the scientific findings of the research that academia produces. Participants also mentioned that

organisations need to collaborate with external consultants (which may include IOPs) to achieve “out of the box” ideas and aid the organisation in accomplishing its goals and objectives (Mayer & Oosthuizen, 2020).

Another study conducted by Meske and Junglas (2021), which investigated success factors of digital workplace transformation, also found that to improve the workplace performance and wellbeing of employees, employees must be enabled to feel connected with others, autonomous, and competent. This suggests that South African organisations that have primarily focused on ‘transformation’ in terms of racial, gender, and income inequality now need to expand their horizons to incorporate and equally prioritise the digital transformation of the workplace and its implications for employees (Bonnin, 2023; Fergus & Collier; 2014; van Dyk & Van Belle, 2019; Webster & Francis; 2019). Similarly, a study implemented by Ghislieri et al. (2018), who examined how the 4IR affects employees and their work profile, discovered that there is a need to be intentional about facilitating human interactions in the workplace given that the introduction of technological advancements has compromised these and has had negative implications on employee wellbeing, informal learning, motivation, and organisational commitment.

Oosthuizen (2022), who presents a critical review of the role of IOPs in the future workplace as shaped by 4IR, asserts that IOPs in South Africa now have two new roles to fulfil in the 4IR process, namely: offering strategic intelligence to the organisation as well as understanding the subjective experiences and responses of employees to 4IR events. This study also identified key competencies and roles that will be demanded of IOPs in a 4IR workplace and tied the emergent roles of IOPs to the top ten work trends identified by SIOPSA in 2021 (Oosthuizen, 2022; Stark, 2021). These top ten work trends include: virtual learning; agile and adaptable cultures; the changing nature of work; work-life integration; team effectiveness across environments; social justice; inclusive talent practices; diversity, equity, inclusion and belongingness; employee health, wellbeing and safety; and remote work and flexible work arrangements (Stark, 2021). It is thus apparent that the above-mentioned studies have alluded to some of the issues that IOPs will have to manage in the 4IR as well as the critical role that they will continue to play in strategically designing organisational structures, improving performance, and managing talent.

STARA refers to smart technology, artificial intelligence (AI), robotics, and algorithms; these technologies are predicted to eliminate approximately a third of jobs by the year 2025

(Oosthuizen, 2022). This has influenced Oosthuizen (2022) to propose a competency model for IOPs in the 4IR that includes specialised competencies, methodological competencies, societal competencies, and personal competencies (Oosthuizen, 2022; Thibodeau, 2014). These categories are very similar to and largely overlap with those identified by Ivaldi et al. (2022). For Oosthuizen (2022), the specialised competencies that IOPs require include STARA knowledge, strategic business functions, advancing human capacity in the organisation, media abilities, understanding cyber security, comprehension of process intricacy, and programming skills. These speak to the digital capability demands that the 4IR-STARA places on IOPs in the current climate (Oosthuizen, 2022). Methodological competencies refer to the approach that IOPs will have to employ in addressing workplace problems and are inclusive of competencies such as creativity, innovative thinking, being able to mobilise data, analysing and processing large amounts of data, problem solving, making informed decisions, and simplifying the complexities of 4IR for organisations and its employees (Oosthuizen, 2022). The societal competencies mentioned address the relational requirements placed on IOPs which incorporate: virtual communication, listening and presentation abilities; diverse language abilities for international networks and engagements; intercultural abilities; participating in knowledge networks; compromising and cooperating abilities; fostering teamwork and cooperation; knowledge transfer abilities; and leadership abilities (Oosthuizen, 2022). Lastly, the personal competencies that IOPs will require in this 4IR-STARA world include continuous learning, tolerance for uncertainty, compliance with new labour-related boundaries, flexibility, and resilience to cope with the demands and changes of this era (Oosthuizen, 2022).

It is noteworthy that Ivaldi et al.'s (2022) study, which highlights the new competencies that organisations will require and should prioritise to thrive in Industry 4.0, largely mirrors the competencies mentioned by Oosthuizen (2022). Specialised competencies, which Ivaldi et al. (2022) refer to as 'technical skills', include understanding IT security, technical knowledge, coding, and media skills. Methodological skills include conflict resolution, creativity, decision-making, entrepreneurial thinking, decision-making, analytical skills, problem solving, efficiency orientation, and research skills (Ivaldi et al., 2022). The social skills category includes skills such as communication, leadership, networking, compromise and cooperation, teamwork, knowledge transfer, language skills, and intercultural skills (Ivaldi et al., 2022). Lastly, the personal skills that Ivaldi et al. (2022) mention include motivation to

learn, flexibility, ability to work under pressure, tolerance for ambiguity, sustainable mindset, and compliance.

Similarly, Coetzee and Veldsman's (2022) study, which explored the views of South African employers on the roles, skills, and attributes of future-fit IOPs in the digital-era, identified the following digital-era service roles: virtual (performance management and workplace motivation, leadership development and coaching, psychological/psychometric assessment, skills development), digitally dexterous scientist-practitioner knowledge-broker, behavioural specialist, and strategic business value creator and communicator. With regards to skills, the study found that strategic business acumen was identified as the most critical digital-era I/O psychology skill amongst other relevant skills such as communication, behaviour and motivation, virtual (change management, assessment, consulting, counselling, coaching and intervention facilitation skills) acumen in digital IOP tools development and leveraging, persuasiveness, digital/STARA intelligence/know-how, compassion, adaptability, and resilience (Coetzee & Veldsman, 2022).

Contrary to the 4IR, which was largely predicted and deemed positive and progressive by many, the Covid-19 pandemic was an unforeseen global challenge (Bonekamp & Sure, 2015; Kniffin et al., 2020; Schwab, 2020; WHO, 2020). The novel coronavirus disease 2019 (Covid-19), also referred to as severe respiratory syndrome coronavirus-2 (SARS-COV-2), was declared a pandemic by the World Health Organisation (WHO) in March 2020 (WHO, 2020). The unprecedented spread of the virus placed scores of health care systems under immense strain and left a tragic trail of a multitude of lives lost worldwide (Barua, 2020; Mishra & Tripathi, 2021; Velavan & Meyer, 2020). Following its various mutations, governments and organisations globally implemented a range of precautionary and preventative measures such as quarantine and social distancing, which had a very damaging impact on labour supply and economic activity (Barua, 2020; Mishra & Tripathi, 2021). This included retrenchments, business liquidations, lockdowns, massive unemployment, vaccination mandates, and protests, all of which had varying implications for the norms of society (Atalan, 2020; Barua, 2020). In South Africa, the Covid-19 pandemic led to the introduction of a series of lockdowns and substantial job losses owing to retrenchments, particularly for blue-collar workers, which further enhanced the already abundant disparities, inequalities, and poverty in the country (Baboolal-Frank, 2021; Thakur & Thakur, 2021; Warah, 2021). Issues such as the digital divide, meagre public health care systems, archaic curricula, economic inequalities, and youth unemployment were exacerbated, increasing the

already urgent need for solutions for these (du Preez & le Grange, 2020; Manda & Dhaou, 2019; Mayer & Oosthuizen, 2020; Ndulu et. al., 2020; Ndulu, et. al., 2021; Phetla & Toko, 2022). It is argued that these issues cannot be addressed in isolation but will require consultation and collaboration of multiple stakeholders across various fields and sectors (Collings et al., 2021; Manda & Dhaou, 2019; Proctor & Vu, 2019).

The Covid-19 pandemic also introduced new ways of working that have complimented and further accelerated the reality of the 4IR (Rudolph et al., 2021; Vladoš et al., 2021). Some of these changes include the introduction of remote and hybrid work (working from home), virtual teams and meetings, and a greater emphasis on mental health and wellbeing (Kniffin et al., 2020). Collings et al. (2021) observed that the pandemic not only placed human resources at the centre of the response of organisations to Covid-19 globally, but also highlighted customers as a key stakeholder in organisations. Some scholars, such as Rudolph et al. (2021), have suggested that Industrial/Organisational psychology is strongly positioned to provide evidence-based advice on how to navigate the impact that pandemics will likely have on work, the workplace, and people (Rudolph et al., 2021). Rudolph et al. (2021) also identified ten areas in the field of I/O psychology that were likely to be impacted by Covid-19, including: work-family issues, occupational health and safety, telecommuting, virtual teamwork, human resources policy, job insecurity, precarious work, leadership, the aging workforce, and careers. Rudolph et al. (2021) further asserted that the Covid-19 pandemic placed a demand on HR departments to utilise scientific-evidence to adjust their policies and procedures adequately and appropriately to support and enable employees even in future pandemics. This assertion is supported by other scholars like Proctor & Vu (2019), who maintain that IOPs can benefit from and better solve some of the new workplace issues that have emerged as a result of the pandemic by collaboratively conducting research in varied disciplines (Proctor & Vu, 2019). A study by Chanana and Sangeeta (2020) found that the pandemic highlighted the importance of employee engagement and that organisations had to creatively implement employee engagement interventions under new working conditions. These interventions included, but were not limited to, webinars contributing towards employee wellbeing, e-learning modules, online meetings, and check-ins (Chanana & Sangeeta, 2020).

A qualitative study by Chinyamurindi et al. (2021), based on the impact of the Covid-19 pandemic on the role of IOPs in South Africa, highlighted emergent themes about the personal and professional impacts of the pandemic on IOPs and their professional roles. The

study identified four key IOP role adjustments that emanated from the challenges of the pandemic, namely: the promotion of continuous professional development, developing technological skills and acumen, establishing support networks amongst practitioners, and prioritising personal physical and mental health (Chinyamurindi et al., 2021). These adjustments are beneficial to IOPs on both the personal and professional level and would likely be classified under Oosthuizen's (2022) personal competencies for IOPs (Chinyamurindi et al., 2021; Oosthuizen, 2022). The continuous professional development of IOPs needs to be prioritised, particularly during the pandemic to aid employees in better managing their well-being, and organisations thus need to increase perceived organisational support and supervisor accessibility (Matli, 2020; Mihalache & Mihalache, 2022). Moralo and Graupner (2022) also recommend that IOPs focus on developing their counselling skills such that they may be positioned to support employees in their management of the psychological impact of Covid-19 in the workplace.

Agrawal et al. (2020) argued that the Covid-19 pandemic has not only accelerated the adoption of a digital workplace but has also created a demand for the re-skilling and digital training of employees. To adapt to this 'new normal' and better ensure business success, they urge organisations to urgently and strategically invest in a learning budget that will support their reskilling agenda (Agrawal et al., 2020). The influence of the recent pandemic on 4IR technology innovations and applications also raises new data privacy and legislation issues for organisations and employees, with associated possible changes for the role of IOPs in the workplace (Chanana & Sangeeta, 2020; Landers et al. 2015; Wang & Kobsa, 2009). Another overarching concern that emerges pertains to cyber-security and ethics, especially as the cultural diversity of the workplace expands as there are likely to be more cyber threats and breaches (Gundu et al., 2019; Xu et al., 2018). Gundu et al. (2019) suggest that organisations will need to recruit individuals with cyber-related skills who can promote cyber-security awareness, improve employee attitudes through training, enforce information security policies (IPS), increase accountability, and monitor the general cyber-security and diversity culture of the workplace. This will also impact the role of IOPs in the workplace and suggests a need to ensure that they themselves possess the appropriate skills to assist in this process as part of their training.

The changes created by the 4IR and the Covid-19 pandemic suggest this may be an opportune time for I/O psychology to redefine and re-introduce itself as a relevant and well-equipped sub-discipline of psychology that will help reposition business for success (Collings et al.,

2021a; Collings et al., 2021b; Schreuder, 2001; Stuart et al., 2021). The 4IR in conjunction with the Covid-19 pandemic has resulted in several demands and changes to human resources development, particularly bringing emphasis to the need for innovation to current change management approaches (Vlados et al., 2021). This implies changes to the roles of IOPs in the workplace and hints at the need to re-think the I/O psychology university curriculum such that IOPs are adequately prepared for the ever-changing world of work (Chinyamurindi et al., 2021). Ghislieri et al. (2018) assert that synergy must be established between universities and organisations, such that the hard and soft skills imparted in universities are appropriately aligned to the needs and expectations of the workplace. Lastly, the evident overlap in the skills that both organisations and IOPs will require to successfully deal with and manage work-related challenges suggests that the future skills of the 4IR cut across most, if not all, industries and professions and IOPs may be imperative to the success of organisations in managing these skills transitions effectively.

The Current Study

Industrial Psychology is a discipline that has its roots in American history, focuses on human behaviour in the workplace, and that has a variety of sub-fields that cater to the diverse needs and aspects of work and the workplace (Campbell, 2002; Katzell & Austin, 1992; Kazi et al., 2013; Landy, 1997; Riggio, 2013; Schreuder & Coetzee, 2010; Uddin & Hossain, 2015). Given the history and implications of the discipline, the training and practice of IOPs is generally governed and regulated by the professional standards set by an overseeing body such as the HPCSA in South Africa (Baloyi, 2012; HPCSA, 2023). Although IOPs often take on a broad range of roles and sometimes struggle to distinguish themselves as unique and distinct to other roles and professions such as human resources, they broadly fulfil the role of scientist-practitioner as they employ their knowledge, skills, and training to address and improve workplace problems (APA, 2013; Olenick et al., 2018; Organizational Psychology Degrees, 2023b; van Zyl et al., 2016). These include the general skills and attributes that all graduates are expected to have irrespective of their field of study, degree, or institution of learning, termed graduateness (Barrie, 2012; Glover et al., 2002; Steur, et al., 2012). They also include skills related to the IOP roles of conducting research, understanding and assessing psychological principles, applying ethics, managing group dynamics, facilitating workplace counselling, carrying out complex problem solving,

conducting research and analysis, enabling communication, improving management/leadership, and encouraging emotional intelligence and wellbeing in the workplace. There are also new and unique demands with regards to the roles and skills that will be expected of IOPs due to changes in the world of work such as those created by the 4IR and the recent Covid-19 pandemic (AMA, 2022; Coetzee & Veldsman, 2022; Columbia Southern University, 2023; HPCSA, 2019; Moralo & Graupner, 2022; Stark, 2021; Oosthuizen, 2022). In order to better understand the implications of these phenomena, the current study explores perceptions of I/O psychology students and trainers in South Africa with respect to the role and skills that they expect IOPs to fulfil in the workplace. There is limited research available that explores the extent to which similar and/or different perceptions of the roles and skills of IOPs are held by different stakeholders in IOP training in South Africa. This research may thus yield valuable insights that can contribute to conceptualising training and registration of IOPs in South Africa and aligning expectations re these between students, universities, and industry.

The current study thus focused on exploring the following research questions:

1. What are the perceptions and expectations held by a sample of South African I/O psychology university students regarding the job roles required of IOPs?
2. What are the perceptions and expectations held by a sample of South African I/O psychology lecturers and supervisors regarding the job roles required of IOPs?
3. What are the perceptions and expectations held by a sample of South African I/O psychology university students regarding the job skills required of IOPs?
4. What are the perceptions and expectations held by a sample of South African I/O psychology lecturers and supervisors regarding the job skills required of IOPs?
5. To what extent are these perceptions and expectations similar to and/or different from one another for both job roles and job skills?

Chapter Three

Methods

Chapter Three of this research report will provide a detailed description of the design, sample, sampling, instruments, procedure, and analysis methods employed in this study. The purpose of this chapter is to provide a meticulous account of the process that led up to the reported results to establish validity (Azevedo et al., 2011). This aligns with the ethical principle of providing a full reporting of the methods used within any given study such that the study may be replicated by other researchers, reviewed by peers for its appropriateness and ethicality, or analysed by the reader to determine the methodology's limitations with regards to the inferences that may be drawn from the results (Vanclay et al., 2013).

Research Design

A non-experimental, cross-sectional, descriptive, and survey-based approach was employed in this study. The design was non-experimental as there was no manipulation of any variables, no control or experimental groups, and no random assignment (Cook & Cook, 2008). The design thus did not meet any of the traditional criteria for causality (i.e., there was no temporal precedence, no covariation, and no non-spuriousness) however this was not a concern as the intention of the study was not causal but rather exploratory and descriptive (Cook & Cook, 2008). The design was also cross-sectional because all of the participant responses were collected at one specific point in time (Belli, 2009). Lastly, the study was both descriptive and survey-based in that it sought to obtain a broad understanding of the perceptions held by students, lecturers, and supervisors/employers with regards to the required job skills and roles of Industrial/ Organisational psychologists (IOPs) in the South African workplace, by means of an online survey (Regmi et al., 2016).

An online survey method was ideal for this study because it was an efficient way of accessing a large number of potential participants for the study (Fricker & Schonlau, 2002; Mathers et al., 2007). Moreover, surveys are generally ideal for studies that seek to measure perceptions, attitudes, and behaviour as the nature of the data collected is subjective (Glasow, 2005).

Another advantage of surveys is that they are highly flexible and allow for multiple forms of data to be collected (Owens, 2002). Survey methods can, however, be negatively affected by issues related to response rate such as participants choosing not to complete the survey or

failing to do so in time or omitting questions, as occurred in this study (Cook & Cook, 2008; Rice et al., 2017).

The online survey in this study included both closed-ended questions and open-ended questions, and thus both quantitative and qualitative data was collected, which allowed for a deeper and more comprehensive perspective on the topic to be obtained (Reja, et. al., 2003). Another advantage of collecting both quantitative and qualitative data is that this combined approach helps to balance out the disadvantages of one approach by the advantages of the other (Driscoll, et. al., 2007). The quantitative component of the study had limited opportunities for exploration but did provide additional structure and allowed for easy comparison of responses by converting the data to numerical form; while the qualitative data gathered provided a more in-depth understanding of the sample's responses and more individual interpretation (Bryman, 2006; Pope et. al., 2000). The application of a two-fold approach to capture the complexity of the phenomena under investigation in the study more comprehensively was thus beneficial and aided in producing more substantial and well-rounded interpretations of the data than would have been obtained by using either quantitative or qualitative data in isolation (Onwuegbuzie & Leech, 2005; Sandelowski, 2000).

Sample and Sampling

A non-probability, purposive, and snowball sampling strategy was used in this study to obtain participants from the different stakeholder groups, specifically Industrial/Organisational (I/O) psychology students, lecturers, and supervisors/employers (Alvi, 2016). The sampling strategy was non-probability and purposive because the sample came from a very specific target population where not all individuals had an equal chance of participating in the proposed study (Naderifar et al., 2017). Snowball sampling was also employed in this study as those invited to participate were asked to forward the electronic invitation to other people that they knew who met the criteria for participation (Biernacki & Waldorf, 1981). All participants were volunteers where a majority were invited to participate electronically by the researcher with permission from the relevant stakeholders after being identified through existing university databases (e.g., students registered for I/O psychology courses, lecturers teaching I/O psychology courses, and affiliated supervisors and employers of the I/O psychology graduates). Other participants were recruited by searching through the Internet

(lecturers and supervisors/employers) or were invited to participate via social media platforms such as Facebook, WhatsApp, and LinkedIn. Aside from involvement in I/O psychology in one of the roles described above, there were no other criteria for participation, except that all participants had to be over the age of 18 and had to have had access to a computer or suitable device and the Internet.

This study initially aimed to obtain and compare representative samples from each of three main stakeholder groups (i.e., I/O psychology students, I/O psychology lecturers and I/O psychology supervisors/employers). This was, however, not possible due to low response rates for both the lecturer and the supervisor/employer groups, which were eventually combined to form a single ‘trainers’ group for analytical purposes. The final sample for this study ($n = 101$) included a group of 60 (59.4%) I/O psychology students and 41 (40.6%) I/O psychology trainers (lecturers and supervisors/employers). The student group was comprised of 19 (31.7%) undergraduate students, 6 (10.0%) Honours students, 22 (36.7%) Masters students, and 13 (21.7%) interns. Undergraduate students were included in the sample to maximise the range of stakeholder perspectives in this group. The trainer group consisted of 6 (14.6%) undergraduate or undergraduate and postgraduate lecturers, 14 (34.1%) postgraduate lecturers or supervisors, and 21 (51.2%) I/O psychology internship supervisors. Table 1 depicts this data.

Furthermore, as shown in Table 2, the I/O psychology student group had an age range of 19 to 38 ($M = 23.92$; $SD = 3.49$) and included 8 (13.3%) males and 52 (86.7%) females. Only 59 student participants specified their race - 24 (40.7%) student participants identified as Black/African, followed by 18 (30.5%) who identified as White/Caucasian, 11 (18.6%) who identified as Indian, and 6 (10.2%) who identified as Coloured. The I/O psychology trainer group had an age range of 24 to 63 ($M = 40.83$; $SD = 11.88$) and included 6 (14.6%) males and 35 (85.4%) females. None of the participants in this group identified as Coloured, only 2 (4.9%) identified as Indian, 11 (26.8%) identified as Black/African, and 28 (68.3%) identified as White/Caucasian.

Table 1

Sample characteristics: stakeholder categories for students (n=60) and trainers (n=41)

	Stakeholder Categories	Frequency n	Percentage %
Students (60)	Undergraduate	19	31.7%
	Honours	6	10.0%
	Masters	22	36.7%
	Intern	13	21.7%
Trainers (41)	Lecturer UG/ UG and PG	6	14.6%
	Lecturer PG (incl. internship)	14	34.1%
	Employer/ Supervisor	21	51.2%
	Employer only	-	-

Table 2

Sample characteristics: Age, gender, and race for students (n=60) and trainers (n=41)

		Total Sample (n = 101)	Students (n = 60)	Trainers (n = 41)
Age	Mean (Std. Dev.)	30.75 (11.53)	23.92 (3.49)	40.83 (11.88)
	Range	19 – 63	19 – 38	24 – 63
	f (%)	f (%)	f (%)	f (%)
Gender	Male	14 (13.9%)	8 (13.3%)	6 (14.6%)
	Female	87 (86.1%)	52 (86.7%)	35 (85.4%)
Race	Black/ African	35 (34.7%)	24 (40.7%)	11 (26.8%)
	Coloured	6 (5.9%)	6 (10.2%)	-
	Indian	13 (12.9%)	11 (18.6%)	2 (4.9%)
	White/ Caucasian	46 (45.5%)	18 (30.5%)	28 (68.3%)
	Not specified	1 (1.0%)	1 (1.7%)	-

Instruments

Although eventually combined into only two groups (students and trainers) for analytical purposes, it was originally hoped that a sufficient number of students, lecturers, and supervisors/employers would be obtained to analyse responses from these groups separately. As a result of this, there were three self-developed online surveys that were created for the study i.e., one for each stakeholder group (please refer to Appendix D for the student survey, Appendix E for the lecturer survey, and Appendix F for the supervisor/employer survey respectively). The self-developed online surveys were distributed using “Google Forms” links, due to the convenience and accessibility of this platform (i.e., it being free, easy to use, accessible on any device, and having a fairly simple interface).

The questions included in the survey were all asked in English and were largely informed by existing literature (e.g., previous research and the existing HPCSA job scope for Industrial/Organisational psychologists (IOPs)). The survey used a self-report response format and included both closed-ended and open-ended questions (Reja et al., 2003; Schuman & Presser, 1979). Surveys were used so that the perceptions of the different stakeholder groups could be recorded freely and easily, without too much restriction; this did, however, mean that all of the data collected depended on the understanding and truthfulness of the participants, especially as there was no opportunity for the researcher to probe or clarify anything during the completion of the survey (Glasow, 2005; Reja et al., 2003).

Each survey consisted of up to sixty items and took approximately fifteen to twenty minutes to complete. The surveys opened with demographic questions, such as the participant’s occupation, age, race, and gender. These were followed by a series of short open-ended questions and closed-ended questions asking participants to provide their opinions regarding the job roles and job skills of IOPs. For the closed-ended questions, participants were asked to respond using Likert-type scales (e.g., *1 = not at all important* to *5 = very important*) and forced-choice items (e.g., *yes* or *no*). An example of such questions is: “*To what extent do you believe that the job role or function of I/O psychologists will change over the next five years? (1=not at all, 2=a little but not significantly, 3=moderately, 4=drastically)*”. Open-ended questions were used to ask participants about their perceptions of the expectations, required skills, training, and job roles of IOPs (e.g., *What are the most important skills that you think employers expect I/O psychology graduates to have?*).

Some of the questions asked were the same across all three surveys. These included open-ended questions about how participants would describe the role of IOPs to someone with little knowledge of the career, why IOPs are important in the workplace, the difference between Human Resource (HR) practitioners and IOPs, how IOPs can be equipped with the skills they need for the workplace, and what skills make graduates better prepared to work as an IOP. They also included closed-ended rating scales for core IOP job roles and skills as well as the extent to which the role of IOPs has changed in the past five years and will change in the next five years.

Other questions asked were tailored to suit each of the stakeholder groups and were only included in the survey for that group. For instance, the lecturer group was asked about whether the university they taught at played a role in determining the kind of skills that they could teach to students and the student group was asked whether they felt that the university they attended played a role in determining employers' expectations of them.

Supervisors/employers were asked about how they felt the curriculum taught at university could be improved to better equip graduates for the working environment and whether graduates understood what was expected of them in the work environment.

Procedure

An ethics application was completed and submitted by the researcher to the Human Research Ethics Committee (non-medical) at the University of the Witwatersrand. Once ethical clearance for the study was obtained (MORG/19/012 IH) (please refer to Appendix B), another application was submitted to the university's registrar to request permission to invite relevant students from the university to participate in the study. Permission to approach students from the University of the Witwatersrand was granted and the registrar also distributed the research invitation (please refer to Appendix C), participant information sheet (please refer to Appendix A), and link to the online survey to the relevant students. Students from other universities were invited to participate in the study via their lecturers, Facebook, WhatsApp, and LinkedIn. Furthermore, an internet search was conducted to find South African universities that offer undergraduate and/or postgraduate Industrial/ Organisational psychology courses as well as the contact details of their respective lecturers and potential employers or supervisors. Relevant persons from these universities were sent the invitation,

participant information sheet, and link to the survey electronically. Where suitable, potential participants were asked to forward the electronic invitation, participant information sheet, and link to other people they knew who met the criteria to participate in the study.

Participants voluntarily completed and submitted the survey in their own time and the responses received from the various participants were then captured and analysed. Completion of the online questionnaire took approximately fifteen to twenty minutes, and to obtain a reasonable sample the data collection period was extended to a total of eight months due to the generally low response rate.

Ethical Considerations

Ethical clearance for this study was obtained from the Human Research Ethics Committee (non-medical) at the University of the Witwatersrand (MORG/19/012 IH) (please refer to Appendix B). In order to ensure that there was informed consent in the study (Polonsky & Waller, 2019), participants were provided with a full participation information sheet (please refer to Appendix A) which included all of the relevant information required to make a decision on whether to participate or not (i.e., the purpose of the study, requirements, ethical issues, and contact details). This information was further included in the email invitation sent to all of the identified stakeholders (please refer to Appendix C); where the voluntary completion and submission of the survey was considered to be informed consent (University of the Witwatersrand, 2019). Therefore, participants right to choose was also protected (Polonsky & Waller, 2019), in that all the participants involved in this study did so voluntarily with no benefits or risks associated with either choosing to participate or not.

To protect the participants right to privacy (Buchanan & Hvizdak, 2009), the responses of the participants were anonymously submitted through the “Google Forms” link (Mathers et al., 2007). Therefore, the participants of this study were not identifiable by name and no identifying information was requested from them in the survey. The demographic information that was requested in the survey was strictly for statistical purposes only and this was also indicated on the survey. Where participant responses were quoted directly, it was ensured that these were sanitised (i.e., all identifying information was removed) (Sieber, 1992). The participants’ rights to withdraw from the study (Vanclay et al., 2013) were also upheld as participants were able to withdraw from the study before submitting the completed survey

and this was specified in the participant information sheet (please refer to Appendix A). Completing and submitting the survey was regarded as informed consent to participate in the study. Feedback was made available to any participant who requested this in the form of a summary. To comply with the ethical standards of data protection, the data collected was stored securely through the use of a password-protected anonymous electronic spreadsheet accessible only to the researcher and supervisor (Vanclay et al., 2013). The participants were also asked for permission for this data to be stored for future use.

The data collected from this sample was analysed to identify general trends and then compiled into a research report to be submitted to the University of the Witwatersrand; this report will be made publicly available on the University of the Witwatersrand Library website. The findings may also be reported in publications and conference proceedings.

Data Analysis

The data collected in this study was stored in the form of a password-protected anonymous electronic spreadsheet. Responses to the closed-ended questions were converted to numerical form and analysed statistically using IBM SPSS version 25 (IBM Corp., 2017). Responses to the open-ended questions were analysed manually using content analysis to identify common themes and compare responses between the key stakeholder groups (Hsieh & Shannon, 2005).

In order to describe the sample, frequencies, percentages, and descriptive statistics such as the mean (average), standard deviation, and range (minimum and maximum values) were calculated and reported on (Field, 2013). Frequencies and percentages (both overall and by stakeholder group) were also calculated to represent the relative importance given to various job roles and job skills listed in the survey as well as the extent to which participants felt job roles had and were likely to change. Mann-Whitney U tests were also calculated to establish if there were significant differences in the rated importance of various job roles and skills between the groups as well as whether there were significant differences in the way they felt job roles had and were likely to change. The Mann-Whitney U-test is a non-parametric test (i.e., does not assume normal distribution) that is used to compare two independent groups (Glen, 2015; McKnight & Najab, 2010). The Mann-Whitney U test was used due to the nature of the questions in this study, the data being ordinal (i.e., Likert-type scales were used

in the surveys), and the sample not meeting the parametric assumptions for a two independent samples t-test (Mann & Whitney, 1947; Wilcoxon, 1947, McKnight & Najab, 2010).

Content analysis (with and without comparative analysis by group) was used to identify (and where relevant compare) themes related to the role of Industrial/ Organisational psychologists (IOPs), how the role of IOPs differs from that of Human Resource (HR) practitioners, why the work of IOPs is important, the skills IOPs need in order to be prepared for the work environment, the most important skills IOPs need, and graduate preparedness. Content analysis is an analytic method used by researchers to systematically summarise and quantify qualitative data in order to categorise and draw inferences about the data gathered (Weber, 1990). This method of analysis was preferred given that it is unobtrusive, replicable, and has a versatile applicability to various forms of data and research methods (Prior, 2014; White & Marsh, 2006). The content analysis process, which Elo et al., (2014) refer to as the 'organisation phase' included coding and inductive category development through reading the data as well as organizing the categories into clusters and identifying examples and relevant quotes (Elo & Kyngäs, 2008; Hsieh & Shannon, 2005).

The first step of the content analysis involved immersion in the data to allow the researcher to familiarise herself with the data collected. This was achieved by reading and re-reading the responses and taking note of initial observations (Erlingsson & Brysiewicz, 2017). This was then followed by reading through each participant's response to identify as many distinct ideas/concepts mentioned in a single response as possible and to sort these into different and not yet defined categories (Elo & Kyngäs, 2008). A deductive approach was employed such that these ambiguous categories were then sorted into more specific categories by establishing clear units and categories of analysis (e.g., key and consistent terms and themes) where the unit of analysis was the frequency with which a single idea was mentioned by a participant and each idea was used to establish a subtheme. One of the coding rules formed was that a participant could be represented in more than one subtheme (depending on the complexity of their response) however a participant could not be represented more than once in a single subtheme (Vaismoradi et al., 2016). The meaning of the participants' responses were primarily semantically analysed, as the researcher aimed to remain as close as possible to what the participants overtly mentioned in their responses (Braun & Clarke, 2006).

The subthemes and their respective coding rules were revisited several times to ensure the relevance and consistency of the responses categorised into the particular subthemes and to improve the overall rigour of the analysis (Elo et al., 2014; Maher et al., 2018). The researcher also constantly reflected on the role their subjective experience and interpretation played in analysing and coding the data. Following this, the established sub-themes were then used to create themes under which the subthemes were categorised and each theme and subtheme name was refined accordingly. The researcher also identified direct quotations from the participants that represented the ideas in each theme and subtheme - these quotes were used to support the interpretations of the subthemes and themes and to allow the participants' own voices to be heard when reporting the findings (Burnard et al., 2008; White & Marsh, 2006). The themes, subthemes, and selected quotes were then written up in a report format (please refer to Chapter Four) and interpreted and discussed further (please refer to Chapter Five).

Conclusion

This chapter has provided a detailed description of the design, sample, sampling, instruments, procedure, and analysis methods employed in this study. The results of the analyses will be presented in the next chapter (Chapter Four).

Chapter Four

Results

Chapter Four of this research report will summarise the qualitative and quantitative results obtained from the analyses in order to answer the research questions in the study. These questions were used to identify and obtain a broader understanding of the perceptions and expectations held by South African industrial/organisational psychology students and trainers with regards to the required job roles and job skills of industrial/organisational psychologists (IOPs), as well as to explore similarities and differences between these perceptions and expectations. The objective of this chapter is to report on the primary findings of this study by highlighting notable results relating to the focus of this study and establishing a good foundation for the interpretation and evaluation of these findings within the discussion section of the report (WIU, 2019; Cherry, 2020). Ethically, this section reports on the data collected honestly with the aim of highlighting and accurately representing the perceptions of the study's participants (Sterba, 2006).

Roles of Industrial/Organisational psychologists

To understand the perceptions held by students and trainers with regards to the role of IOPs in the workplace, participants responded to three open-ended and two closed-ended questions. Participants were asked to respond qualitatively to questions about how they would describe the role of an IOP to someone with little or no knowledge of this career, why they felt IOPs were important in the workplace and what they believed differentiated HR practitioners and IOPs. Participants were also asked to quantitatively rate how important different job roles were to the work carried out by IOPs and to indicate whether they felt the job roles of IOPs had changed over the past five years and would change over the next five years. The primary objective of these questions was to gain an understanding of how the study sample would generally describe and understand the job roles of IOPs as well as how likely they were to perceive changes in the roles of IOPs in the workplace.

For the question of how participants would describe the role of an IOP to someone with little or no knowledge of this career, the key themes that emerged from the data are summarised in Table 3.

Table 3

Themes for describing the role of industrial/organisational psychologists for students (n=60) and trainers (n=41)

Themes and sub-themes	Students (n = 60)		Trainers (n = 41)	
	f	%	f	%
Psychological roles				
To use psychological theory/research to improve the workplace/ solve problems/ understand human behaviour	29	48.3%	19	46.3%
To carry out psychometric assessments/ evaluations	8	13.3%	3	7.3%
To provide workplace counselling/psychological support	9	15.0%	4	9.8%
Facilitative roles	f	%	f	%
To help organisations and employees to maximise productivity/ work effectively	25	41.7%	22	53.7%
To enhance employee physical wellbeing/ mental wellbeing/ work-life balance	15	25.0%	13	31.7%
To improve staff motivation/morale/work engagement/job satisfaction/commitment/create a positive work environment	8	13.3%	7	17.1%
To facilitate organisational and employee development/ workplace training	6	10.0%	8	19.5%
Organisational roles	f	%	f	%
To mediate between the organisation and employees/ balance welfare of all parties/ improve employment and labour relations	9	15.0%	7	17.1%
To improve organisational leadership/ management practices	1	1.7%	4	9.8%
To improve recruitment/ job-role fit	10	16.7%	3	7.3%
To manage human resources strategically/ align organisational and individual goals/ facilitate organisational strategic planning	12	20.0%	8	19.5%
To create a fairer or more ethical or more equitable work environment	3	5.0%	4	9.8%
To create/ interpret policy	3	5.0%	1	2.4%
Missing response	1	1.7%	-	-

The data in Table 3 suggests that both students and trainers frequently described the work of IOPs in terms of their psychological and facilitative roles in an organisation. Both students and trainers primarily described the role of IOPs as using psychological theory, principles, and research to improve the workplace, solve problems, and understand human behaviour (students: 48.3%; trainers: 46.3%); aiding organisations and employees to maximise productivity and work effectively (students: 41.7%; trainers: 53.7%); and enhancing employee physical and mental wellbeing and work-life balance (students: 25%; trainers: 31.7%). Examples of this are captured in the following responses:

“I/O psychologist role include [sic] using research methods and formulate [sic] theories to solve problems in a workplace” (Participant 18, 22, Honours student).

“Industrial-organizational psychologists use psychological principles and research methods to solve problems in the workplace and improve the quality of life” (Participant 92, 61, supervisor).

“... They study human behaviour at work for the purpose of measuring, understanding, and changing this behaviour...this goes for individuals, groups, and organisations... by doing so they make these entities perform better” (Participant 69, 36, lecturer).

“An I/O psychologist is someone who helps organisations assist their employees in performing optimally” (Participant 1, 26, Masters student).

“I/O psychologists are tasked with helping ensure that the quality of life in work environments is healthy” (Participant 44, 20, undergraduate student).

Students and trainers also indicated at fairly similar rates that the role of IOPs included managing human resources strategically, aligning organisational and individual goals, and facilitating organisational strategic planning (students: 20%; trainers: 19.5%); mediating between the organisation and employees, improving inter-level communication, balancing the welfare of all parties, and employment and labour relations (students: 15%; trainers: 17.1%); improving staff motivation, morale, work engagement, job satisfaction, commitment, and creating a positive work environment (students: 13.3%; trainers: 17.1%); and creating a fairer, more ethical, or more equitable work environment (students: 5.0%; trainers: 9.8%). Some examples of this are represented in the following quotes:

“The role of an I/O psychologist is to contribute to the organisation's strategic success through unleashing human capital capabilities and aligning these to the company's strategic direction” (Participant 108, 39, supervisor).

“The ability to ensure a healthy communication between management and employees in ensuring a maximum benefit for the organization without harm to the employee” (Participant 22, 22, undergraduate student).

“Working with people, teams and organisations to ensure maximum engagement, optimal relationships and physical and mental engagement and wellbeing” (Participant 84, 28, supervisor).

“Someone to serve the interests of both the employees and employers equally” (Participant 50, 37, undergraduate student).

Both students and trainers therefore generally described the role of IOPs in comparable ways however there were also disparities. Students described the IOP role as relating to the improvement of recruitment, job-role fit facilitation, and job placement (students: 16.7%; trainers: 7.3%); providing workplace counselling and psychological support (students: 15%; trainers: 9.8%); and carrying out psychometric evaluations or assessments (students: 13.3%; trainers: 7.3%) more frequently than trainers did. Similarly, trainers described the IOP role as facilitating organisational and employee development and providing workplace training (students: 10%; trainers: 19.5%) and improving organisational leadership and management practices (students: 1.7%; trainers: 9.8%) more frequently than students did. Some examples of this are:

“They make sure the company hires the right person at the right time and that will dit [sic] the best” (Participant 30, 24, student intern).

“Person to talk to in a world of increasing pressure and mental health still seen as a unspoken about condition” (Participant 17, 23, student intern).

“Working with people in industry, ensuring effectiveness and efficiency through the development of people in their roles in organisations” (Participant 74, 53, lecturer).

Similar roles were reported when participants were asked to comment on why they thought IOPs were important in the workplace. Table 4 gives a summary of these.

Table 4

Theme for describing the importance of industrial/organisational psychologists for students (n=60) and trainers (n=41)

Themes and sub-themes	Students (n = 60)		Trainers (n = 41)	
	f	%	f	%
Enhance engagement and productivity				
Focus on employee engagement/motivation and performance	5	8.3%	4	9.8%
Increase productivity	7	11.7%	4	9.8%
Use psychological principles to optimise employee performance	1	1.7%	3	7.3%
Enhance organisational efficiency/ efficacy	3	5.0%	1	2.4%
Empirically solve workplace problems	3	5.0%	1	2.4%
Mediation	f	%	f	%
Intermediate between employee and supervisor needs	24	40.0%	4	9.8%
Ensure ethical/legal employment compliance	4	6.7%	2	4.9%
Address employee-related issues	f	%	f	%
Manage the human component of the organisation	7	11.7%	5	12.2%
Improve employee wellbeing	1	1.7%	4	9.8%
Advocate for employees	4	6.7%	1	2.4%
Provide workplace counselling	2	3.3%	-	-
Training	f	%	f	%
Possess unique knowledge/expertise	2	3.3%	8	19.5%
Other	f	%	f	%
Uncertain/Unclear	1	1.7%	-	-
Unimportant	-	-	1	2.4%
Yes	-	-	1	2.4%
Missing	f	%	f	%
	3	5.0%	-	-

For the student group, the most important role played by IOPs in the workplace was their mediation of the relationships between supervisors and employees with the aim of meeting the needs of both parties involved, however this was not a role that many trainers felt was important (students: 40%; trainers: 9.8%). Both students and trainers did agree that managing the human component of the organisation (students: 11.7%; trainers: 12.2%), increasing productivity (students: 11.7%; trainers: 9.8%), a focus on employee engagement, motivation,

and performance (students: 8.3%; trainers: 9.8%), and ensuring ethical and legal employment (students: 6.7%; trainers: 4.9%) were important roles for IOPs. Some examples of this are represented in the following quotes:

“Provide a bridge between management and employees, can help to ensure everyone’s [sic] needs and wants are addressed and provided for” (Participant 15, 23, Masters student).

“Help people perform better and be the best version of themselves as they achieve organizational goals” (Participant 70, 38, lecturer).

“Because they ensure the correct recruitment and selection methods, on the job training and career development occurs. As well as ensures [sic] correct disciplinary procedures and organizational [sic] procedures are applied” (Participant 26, 22, undergraduate student).

“We use our insight into human behaviour to help organisations to manage people more effectively” (Participant 88, 49, supervisor).

The trainer group felt that IOPs were most important to the workplace because of the unique knowledge and expertise that they possess, however very few students felt that this was important (students: 3.3%; trainers: 19.5%). The trainer group also felt that improving employee wellbeing was a more important IOP role than students did (students: 1.7%; trainers: 9.8%) and students felt that advocating for employees was a more important IOP role than trainers did (students: 6.7%; trainers: 2.4%). Some examples of this are:

“They are crucial as no one else in business has this knowledge” (Participant 79, 59, lecturer)

“They bring a different lens and skillset to the workplace which combines an understanding of both human and business elements...” (Participant 96, 28, supervisor).

“Critical to the wellbeing growth and development of staff...” (Participant 103, 43, supervisor).

“To ensure that fair practices are in place and that everyone’s [sic] wellbeing is considered and optimized” (Participant 23, 21, undergraduate student).

Participants were also asked to share their thoughts on what makes an I/O psychologist distinct from a human resources (HR) practitioner. Table 5 described the themes and subthemes that emerged from the data for this question.

Table 5

Themes for distinguishing human resource practitioners from industrial/organisational psychologists for students (n=60) and trainers (n=41)

Themes and sub-themes	Students (n = 60)		Trainers (n = 41)	
	f	%	f	%
Daily processes				
IOP use psychological expertise to improve the workplace	7	11.7%	6	14.6%
IOP carry out psychometric assessments/ evaluations/ have access to classified tests	8	13.3%	11	26.8%
IOP possess specialised psychological expertise and training/ competence/ deeper theoretical knowledge	10	16.6%	4	9.8%
IOP conduct research to formulate scientifically proven solutions and theories	9	15%	9	22%
IOP facilitate employee wellbeing in the workplace	9	15%	1	2.4%
IOP facilitate employee development/counselling	2	3.3%	-	-
IOP handle psychological aspects of human behaviour/have an individual understanding of employees	5	8.3%	11	26.8%
HR perform day-to-day administrative tasks/duties	7	11.7%	6	14.6%
HR ensure labour law compliance/adherence to workplace policies	3	5%	1	2.4%
HR responsible for the implementation of theories/solutions proposed by IOP's	3	5%	-	-
HR responsible for managing processes and technical aspects of work	6	10%	6	14.6%
HR responsible for recruitment, selection, and retention of employees	7	11.7%	-	-
Scope/focus	f	%	f	%
IOP focus on the organisation as a whole /have a holistic view of the organisation	3	5%	4	9.8%
IOP possess broad/varied functions and capabilities	3	5%	-	-
IOP perform transformational functions	-	-	2	4.9%
IOP look out for both employee and organisation	1	1.7%	1	2.4%
IOP implement interventions/ assist HR with recruitment and selection	2	3.3%	-	-
HR have generalised knowledge, training and functioning (lack psychological expertise and training)	4	6.7%	-	-
HR focus on people for the business' benefit	2	3.3%	-	-
HR focus on a specific aspect of the organisation	1	1.7%	-	-
Approach/traits	f	%	f	%
IOP think strategically/ are forward thinking	8	13.3%	4	9.8%
IOP are proactive	2	3.3%	-	-
IOP are long-term orientated	2	3.3%	-	-

IOP have room for flexibility and creativity/ aim for high standards/ think out of the box /explore new things	2	3.3%	1	2.4%
IOP are independent of the organisation/consult	2	3.3%	-	-
HR seem to have a reactive/ rigid/short-term orientation	3	5%	-	-
HR perform transactional functions/ things that people can see	-	-	4	9.8%
HR are employees of the organisation	1	1.7%		
HR perform strategic work/are part of the organisation's decision-making process	1	1.7%	1	2.4%
They have different approaches	-	-	1	2.4%
General	f	%	f	%
Uncertain/unclear /not sure	1	1.7%	1	2.4%
They do different work	2	3.3%	-	-
They have different salaries	1	1.7%	-	-
They are the same/similar/overlap	3	5%	2	4.9%
Missing responses	3	5%	2	4.9%

Table 5 depicts an interesting view of how both students and trainers perceive and distinguish the role of IOPs from that of HR practitioners. Both groups primarily distinguished the two professions in terms of the “daily processes” that they perform. These included that IOPs are distinguishable from HR practitioners because of their psychological expertise, specialised training, and deeper theoretical knowledge (students: 16.6%; trainers: 9.8%); handling of psychological aspects of human behaviour and individual understanding of employees (students: 8.3%; trainers: 26.8%); carrying out psychometric testing and evaluations and having access to classified tests (students: 13.3%; trainers: 26.8%); conducting research to formulate scientifically proven solutions and theories (students: 15%; trainers: 22%); and using psychological expertise to improve the workplace (students: 11.7%; trainers: 14.6%). A few students also indicated that the role of IOPs for facilitating employee wellbeing distinguished them from HR practitioners (students: 15%; trainers: 2.4%). HR practitioners were seen by both students and trainers as performing more day-to-day administrative tasks and duties (students: 11.7%; trainers: 14.6%) and having more responsibility for managing processes and technical aspects of work (students: 10%; trainers: 14.6%). Some examples of these perspectives are:

“I believe that the training that IOPs receive makes them distinctly differently qualified to HR practitioners. This training and the regulation and control of registration as an IOP ensures that there is a certain level of knowledge set on the platform of ethical conduct and awareness” (Participant 6, 25, Masters student).

“They [IOPs] have a deeper understanding of people from a psychological point of view” (Participant 90, 48, supervisor).

“IOP's can use psychometric instruments classified by the HPCSA as tools which measures psychological [sic] constructs” (Participant 77, 57, lecturer).

“Hr [sic] focuses more on recruiting talented employees and iop [sic] focuses on retaining those talented employees by looking after their personal and professional wellbeing” (Participant 32, 23, Honours student).

“HR is more to do with the operational management of recruitment, payroll, performance management...” (Participant 35, 28, Masters student).

In terms of their scope and focus, both students and trainers agreed that IOPs were different from HR practitioners in that their focus is on the organisation as a whole (students: 5%; trainers: 9.8%). In the student group only, a few participants also felt that IOPs possess a broader range of varied capabilities and functions (students: 5%; trainers: none) and that HR practitioners lack psychological expertise and training and rather have generalised knowledge, training, and functioning (students: 6.7%; trainers: none). Some examples of this are represented in the following quotes:

“...industrial psychologist look at the organization as a whole” (Participant 22, 22, undergraduate student).

“IOP's look at and work in the organisation on a much broader level than HR” (Participant 74, 53, lecturer).

“I/O psychologists don't just do HR jobs but they also do things that a HR is not qualified to do. Such as counselling and psychometrics” (Participant 10, 23, Masters student).

Both groups of participants identified IOPs thinking strategically and employing forward thinking in their approach within the work environment as a difference in approach between IOPs and HR practitioners (students: 13.3%; trainers: 9.8%). A number of trainers perceived that HR practitioners were different from IOPs because they perform transactional functions (students: none; trainers: 9.8%) and a few students perceived that HR practitioners were

different from IOPs because they have a reactive, rigid, or short-term orientation (students: 5%; trainers: none). Some examples of this are:

“I/O Psychologists take a strategic perspective on HR activities...” (Participant 21, 23, Masters student).

“HR Practitioners seem to be involved in the general transactional HR functions whereas I/O are involved in the transformational functions” (Participant 85, 37, supervisor).

“HR is process driven and rigid where IOP is practice and application of knowledge in the workplace...” (Participant 33, 25, Honours student).

In both the trainer and student groups, a small number of participants saw some overlaps between the role of HR practitioners and IOPs (students: 5%; trainers: 4.9%) or were unclear on the difference between these (students: 1.7%; trainers: 2.4%). Examples of this are:

“One can be both, so there is not always a difference” (Participant 88, 49, employer).

“[sic] Doesn't need to differentiate. HR practitioners (job title) can be I/o psychologists” (Participant 49, 26, student intern).

In addition to the open-ended questions, students and trainers were asked to rate the level of importance of different standard roles/functions of IOPs. The frequencies and percentages for these ratings are presented in Table 6.

In the student group, a large majority of participants (over 80% of the group) rated twelve of the fifteen roles as ‘important’ or ‘very important’ compared to the trainer group, where a large majority of participants (over 80% of the group) rated only five of the roles as ‘important’ or ‘very important’. The roles that were rated as ‘important’ and ‘very important’ most frequently in the student group were: organisational development (97.2%); employee wellbeing/work life (96.7%); training (93.3%); motivation and rewards (90%); change management (88.3%); research (86.7%); recruitment and selection (86.6%); psychological assessments (85%); and performance evaluation (85%). The roles that were rated as ‘important’ and ‘very important’ most frequently in the trainer group were: organisational development (90.2%); change management (90.2%); employee wellbeing/work life (87.8%); coaching (87.8%); psychological assessments (85.3%); training (75.6%); motivation and rewards (75.6%); counselling (65.9%); and research (65.8%).

Table 6*Role importance rating frequencies and percentages for students (n = 60) and trainers (n = 41)*

Role/function	Students						Trainers					
	1	2	3	4	5	Ms.	1	2	3	4	5	Ms.
Psychological assessments	-	4 (6.7)	5 (8.3)	15 (25)	36 (60)	-	-	-	6 (14.6)	14 (34.1)	21 (51.2)	-
Training	-	1 (1.7)	3 (5)	17 (28.3)	39 (65)	-	-	4 (9.8)	6 (14.6)	14 (34.1)	17 (41.5)	-
Recruitment and selection	-	-	8 (13.3)	26 (43.3)	26 (43.3)	-	3 (7.3)	3 (7.3)	11 (26.8)	12 (29.3)	11 (26.8)	-
Research	-	1 (1.7)	7 (11.7)	21 (35)	31 (51.7)	-	-	3 (7.3)	10 (24.3)	14 (34.1)	13 (31.7)	1 (2.4)
Counselling	3 (5)	2 (3.3)	13 (21.7)	16 (26.7)	26 (43.3)	-	2 (4.9)	3 (7.3)	9 (22)	12 (29.3)	15 (36.6)	1 (2.4)
Organisational development	-	-	1 (1.7)	9 (15.5)	49 (81.7)	1 (1.7)	-	1 (2.4)	2 (4.9)	11 (26.8)	26 (63.4)	1 (2.4)
Human factors/ ergonomics	1 (1.7)	3 (5)	6 (10)	22 (36.7)	28 (46.7)	-	3 (7.3)	5 (12.2)	8 (19.5)	16 (39)	9 (22)	-
Compensation and benefits	1 (1.7)	4 (6.7)	16 (26.7)	17 (28.3)	22 (36.7)	-	5 (12.2)	10 (24.3)	14 (34.1)	7 (17.1)	4 (9.8)	1 (2.4)
Labour law compliance	-	1 (1.7)	9 (15)	18 (30)	30 (50)	2 (3.3)	5 (12.2)	8 (19.5)	13 (31.7)	8 (19.5)	6 (14.6)	1 (2.4)
Motivation and rewards	-	-	6 (10)	15 (25)	39 (65)	-	1 (2.4)	3 (7.3)	6 (14.6)	15 (36.6)	16 (39)	-
Coaching	-	2 (3.3)	7 (11.7)	22 (36.7)	28 (46.7)	1 (1.7)	-	1 (2.4)	3 (7.3)	17 (41.5)	19 (46.3)	1 (2.4)
Performance evaluation	-	-	9 (15)	17 (28.3)	34 (56.7)	-	-	2 (4.9)	13 (31.7)	16 (39)	10 (24.4)	-
Marketing/ consumer satisfaction	4 (6.7)	10 (16.7)	17 (28.3)	17 (28.3)	12 (20)	-	8 (19.5)	12 (29.3)	14 (34.1)	5 (12.2)	2 (4.9)	-
Employee wellbeing/ work life	-	-	2 (3.3)	9 (15)	49 (81.7)	-	2 (4.9)	-	3 (7.3)	12 (29.3)	24 (58.5)	-
Change management	-	-	7 (11.7)	11 (18.3)	42 (70)	-	-	1 (2.4)	3 (7.3)	11 (26.8)	26 (63.4)	-

1 = not at all important; 2 = slightly important; 3 = fairly important; 4 = important; 5 = very important; Ms. = missing

From this we see that both students and trainers rated organisational development, employee wellbeing/work life, change management, training, psychological assessments, motivation and rewards, and research in their top roles. Top roles that were unique to each group were recruitment and selection and performance evaluation for students and coaching and counselling for trainers. Both students and trainers rated marketing/consumer satisfaction (students: 48.3%; trainers: 17.1%) and compensation and benefits (students: 65%; trainers: 26.9%) as 'important' or 'very important' with the lowest frequencies.

Table 7 presents the Mann-Whitney U test results comparing the rated importance of each role between the student and trainer groups.

As shown in Table 7, there were significant differences in the importance ratings between the students and the trainers for training ($U = 880.50$; $p < .05$); recruitment and selection ($U = 813.00$; $p < .05$); research ($U = 884.00$; $p < .05$); organisational development ($U = 958.50$; $p < .05$); human factors/ergonomics ($U = 820.00$; $p < .05$); compensation and benefits ($U = 617.00$; $p < .05$); labour law compliance ($U = 485.50$; $p < .05$); motivation and rewards ($U = 868.50$; $p < .05$); performance evaluation ($U = 768.50$; $p < .05$); marketing/consumer satisfaction ($U = 744.50$; $p < .05$); and employee wellbeing/work life ($U = 933.00$; $p < .05$). For all of these roles, students rated these as significantly more important core functions for IOPs than the trainers did. There were only four cases where there were no significant differences in the rated importance of each role for IOPs between the students and the trainers. These were: psychological assessments ($U = 1152.00$; $p > .05$); counselling ($U = 1135.50$; $p > .05$); coaching ($U = 1147.50$; $p > .05$); and change management ($U = 1162.00$; $p > .05$).

Finally, participants of the study were asked to quantitatively rate how likely they felt it was that the role of I/O psychologists had changed in the past five years and would change in the next five years. Table 8 depicts the frequency and percentages for these responses. Table 8 indicates that a majority of students and trainers (students: 66.7%; trainers: 61%) concurred that the role of IOPs had moderately changed in the past five years. A majority of students (61.7%) felt that the role of IOPs would change drastically in the next five years, while an equal number of trainers felt that the role of IOPs would change moderately (43.9%) or drastically (43.9%) in the next five years.

Table 7*Mann-Whitney U tests for the role importance ratings (N = 101)*

Roles	Group	n	Mean Rank	MWU	Z	p-value
Psychological assessments	Students	60	52.30	1152.000	-0.605	.545
	Trainers	41	49.10			
Training	Students	60	56.83	880.500	-2.702	.007
	Trainers	41	42.52			
Recruitment and selection	Students	60	56.95	813.000	-2.890	.017
	Trainers	41	40.83			
Research	Students	60	55.77	884.000	-2.388	.017
	Trainers	40	42.60			
Counselling	Students	60	52.58	1135.500	-0.688	.491
	Trainers	41	48.70			
Organisational development	Students	59	53.75	958.500	-2.116	.034
	Trainers	40	44.46			
Human factors/ ergonomics	Students	60	57.83	820.000	-2.998	.003
	Trainers	41	41.00			
Compensation and benefits	Students	60	60.22	617.000	-4.234	.000
	Trainers	40	35.92			
Labour law compliance	Students	58	61.13	485.500	-5.084	.000
	Trainers	40	32.64			
Motivation and rewards	Students	60	57.35	868.500	-2.777	.005
	Trainers	41	43.14			
Coaching	Students	59	49.45	1147.500	-0.254	.799
	Trainers	40	50.81			
Performance evaluation	Students	60	58.69	768.500	-3.417	.000
	Trainers	41	39.74			
Marketing/ consumer satisfaction	Students	60	59.09	744.500	-3.452	.000
	Trainers	41	39.16			
Employee wellbeing/ work life	Students	60	55.95	933.000	-2.623	.009
	Trainers	41	43.76			
Change management	Students	60	52.13	1162.000	-0.569	.570
	Trainers	41	49.34			

Table 8

Change in job role/function frequencies and percentages for students (n=60) and trainers (n=41)

		Not at all	A little but not significantly	Moderately	Drastically
Past Five Years	Students	1 (1.7)	7 (11.7)	40 (66.7)	12 (20)
	Trainers	1 (2.4)	8 (19.5)	25 (61)	7 (17.1)
	Total	2 (2)	15 (14.9)	65 (64.4)	19 (18.8)
Next Five Years	Students	1 (1.7)	4 (6.7)	18 (30)	37 (61.7)
	Trainers	-	5 (12.2)	18 (43.9)	18 (43.9)
	Total	1 (1)	9 (8.9)	36 (35.6)	55 (54.5)

Table 9 presents the Mann-Whitney U test results comparing the rated likelihood of changes to the IOP role over the past five years and in the next five years between the student and trainer groups. As shown in Table 9, there were no significant differences in perceived changes in the roles of IOPs between the students and trainers for both the past five years ($U = 1114.50$; $p > .05$) and next five years ($U = 1014.00$; $p > .05$).

Table 9

Mann-Whitney U tests for the changes in the role of I/O psychologist (N = 101)

Changes in Role	Group	n	Mean Rank	MWU	Z	p-value
Past Five Years	Students	60	52.93	1114.500	-0.939	.348
	Trainers	41	48.18			
Next Five Years	Students	60	54.60	1014.000	-1.678	.093
	Trainers	41	45.73			

Skills of Industrial/Organisational psychologists

In exploring the perceptions held by students and trainers with regards to the skills required of IOPs in the workplace, participants were asked to quantitatively rate the importance of a set of skills presented to them. They were also asked about their perceptions of the skills that they felt industrial/ organisational psychology graduates should have in order to be prepared for the workplace and the skills they believed would give industrial/ organisational psychology students a competitive advantage in the workplace. These qualitative questions were asked so as to obtain a general understanding of the skills that both students and trainers considered to be important for IOPs in their professional practice.

Table 10 summarises the frequencies and percentages of the skills importance ratings for the student and trainer groups. For the student group, the following skills were rated as important or very important skills for IOPs most frequently: people management (100%); critical thinking (100%); listening (100%); responsibility/reliability (98.3%); honesty/integrity (98.3%); communication (98.3%); time management (96.7%); emotional intelligence (96.7%); conflict management (96.7%); teamwork (93.3%); complex problem-solving skills (93.3%); patience (91.6%); tolerance (90%); and leadership skills (90%). For the trainer group, the following skills were rated as important or very important skills for IOPs most frequently: honesty/integrity (100%); communication (100%); responsibility/reliability (97.5%); emotional intelligence (95.1%); critical thinking (95.1%); conflict management (95.1%); listening (95.1%); creativity (92.7%); people management (92.7%); flexibility (90.2%); complex problem-solving skills (85.3%); leadership skills (83%); tolerance (80.5%); and teamwork (80.4%).

There was a lot of agreement about the most important skills between students and trainers, which included: honesty/integrity, communication, listening, responsibility/reliability, critical thinking, people management, conflict management, emotional intelligence, complex problem-solving skills, leadership skills, teamwork, and tolerance. Students rated time management (students: 96.7%; trainers: 75.6%), friendliness (students: 86.7%; trainers: 65.8%), patience (students: 91.6%; trainers: 78%), boldness (students: 80%; trainers: 60.9%), and negotiation skills (students: 86.7%; trainers: 63.4%) as important or very important more frequently than trainers did; while trainers rated entrepreneurship (students: 50%; trainers: 63.4%) as important or very important more frequently than students did. Both groups identified mathematical skills (students: 30%; trainers: 29.2%) and social media use skills (students: 43.3%; trainers: 41.5%) as important or very important skills for IOPs with the lowest frequency.

Table 10*Skills importance rating frequencies and percentages for students (n = 60) and trainers (n = 41)*

Skill	Students						Trainers					
	1	2	3	4	5	Ms.	1	2	3	4	5	Ms.
Time management	-	-	2 (3.3)	15 (25)	43 (71.7)	-	-	4 (9.8)	6 (14.6)	17 (41.5)	14 (34.1)	-
Creativity	-	1 (1.7)	6 (10)	29 (48.3)	24 (40)	-	-	2 (4.9)	1 (2.4)	22 (53.7)	16 (39)	-
Entrepreneurship	1 (1.7)	7 (11.7)	22 (36.7)	19 (31.7)	11 (18.3)	-	1 (2.4)	4 (9.8)	10 (24.4)	18 (43.9)	8 (19.5)	-
Communication	-	-	-	3 (5)	56 (93.3)	1 (1.7)	-	-	-	4 (9.8)	37 (90.2)	-
People management	-	-	-	7 (11.7)	53 (88.3)	-	-	1 (2.4)	2 (4.9)	8 (19.5)	30 (73.2)	-
Emotional intelligence (EQ)	-	1 (1.7)	1 (1.7)	6 (10)	52 (86.7)	-	-	-	2 (4.9)	2 (4.9)	37 (90.2)	-
Friendliness	-	2 (3.3)	6 (10)	24 (40)	28 (46.7)	-	-	2 (4.9)	12 (29.3)	19 (46.3)	8 (19.5)	-
Tolerance	-	1 (1.7)	4 (6.7)	16 (26.7)	38 (63.3)	1 (1.7)	-	2 (4.9)	6 (14.6)	16 (39)	17 (41.5)	-
Critical thinking	-	-	-	7 (11.7)	53 (88.3)	-	-	-	2 (4.9)	8 (19.5)	31 (75.6)	-
Patience	1 (1.7)	-	4 (6.7)	23 (38.3)	32 (53.3)	-	-	1 (2.4)	8 (19.5)	16 (39)	16 (39)	-
Honesty/ integrity	-	-	1 (1.7)	5 (8.3)	54 (90)	-	-	-	-	3 (7.3)	38 (92.7)	-
Teamwork	-	-	4 (6.7)	26 (43.3)	30 (50)	-	-	2 (4.9)	6 (14.6)	14 (34.1)	19 (46.3)	-
Flexibility	-	1 (1.7)	7 (11.7)	16 (26.7)	36 (60)	-	-	-	4 (9.8)	16 (39)	21 (51.2)	-
Conflict management	-	-	1 (1.7)	12 (20)	46 (76.7)	1 (1.7)	-	-	2 (4.9)	13 (31.7)	26 (63.4)	-
Mathematical skills	3 (5)	13 (21.7)	26 (43.3)	15 (25)	3 (5)	-	1 (2.4)	6 (14.6)	22 (53.7)	11 (26.8)	1 (2.4)	-
Complex problem- solving skills	-	-	4 (6.7)	21 (35)	35 (58.3)	-	-	-	6 (14.6)	6 (14.6)	29 (70.7)	-
Listening	-	-	-	9 (15)	51 (85)	-	-	1 (2.4)	1 (2.4)	3 (7.3)	36 (87.8)	-
Compassion	-	-	7 (11.7)	18 (30)	35 (58.3)	-	-	2 (4.9)	7 (17.1)	11 (26.8)	21 (51.2)	-

Boldness	-	3	9	24	24	-	-	2	14	11	14	-
		(5)	(15)	(40)	(40)			(4.9)	(34.1)	(26.8)	(34.1)	
Leadership skills	-	1	4	18	36	1	-	1	6	17	17	-
		(1.7)	(6.7)	(30)	(60)	(1.7)		(2.4)	(14.6)	(41.5)	(41.5)	
Negotiation skills	-	3	4	16	36	1	1	-	14	18	8	-
		(5)	(6.7)	(26.7)	(60)	(1.7)	(2.4)		(34.1)	(43.9)	(19.5)	
Responsibility/ reliability	-	-	1	11	48	-	-	-	1	11	29	-
			(1.7)	(18.3)	(80)				(2.4)	(26.8)	(70.7)	
Social media use skills	2	13	19	18	8	-	1	7	16	13	4	-
	(3.3)	(21.7)	(31.7)	(30)	(13.3)		(2.4)	(17.1)	(39)	(31.7)	(9.8)	

1 = not at all important; 2 = slightly important; 3 = fairly important; 4 = important; 5 = very important; Ms. = missing

Table 11 presents the Mann-Whitney U test results comparing the rated importance of each skill between the student and trainer groups. Table 11 indicates that there were significant differences in the importance ratings between the student and trainer groups for the following skills: time management ($U = 706.50$; $p < .05$); people management ($U = 1033.00$; $p < .05$); friendliness ($U = 810.00$; $p < .05$); tolerance ($U = 907.00$; $p < .05$); leadership skills ($U = 953.50$; $p < .05$); and negotiation skills ($U = 668.00$; $p < .05$). For all of these skills, students rated these as significantly more important skills for IOPs than the trainers did. Conversely, there were no significant differences in the importance ratings between the students and trainer groups for a majority of the skills, namely: creativity ($U = 1214.00$; $p > .05$); entrepreneurship ($U = 1104.50$; $p > .05$); communication ($U = 1153.00$; $p > .05$); emotional intelligence ($U = 1189.00$; $p > .05$); critical thinking ($U = 1066.50$; $p > .05$); patience ($U = 993.00$; $p > .05$); honesty/integrity ($U = 1195.50$; $p > .05$); teamwork ($U = 1105.00$; $p > .05$); flexibility ($U = 1156.00$; $p > .05$); conflict management ($U = 1028.00$; $p > .05$); mathematical skills ($U = 1160.50$; $p > .05$); compassion ($U = 1093.00$; $p > .05$); boldness ($U = 1044.00$; $p > .05$); leadership ($U = 953.50$; $p > .05$); responsibility/reliability ($U = 1116.00$; $p > .05$); and social media use ($U = 1224.50$; $p > .05$).

Table 11*Mann-Whitney U tests for the skills importance ratings (N = 101)*

Skills	Group	n	Mean Rank	MWU	Z	p-value
Time management	Students	60	59.73	706.500	-4.078	.000
	Trainers	41	38.23			
Creativity	Students	60	50.73	1214.000	-0.123	.902
	Trainers	41	51.39			
Entrepreneurship	Students	60	48.91	1104.500	-0.909	.363
	Trainers	41	54.06			
Communication	Students	59	51.46	1153.000	-0.896	.370
	Trainers	41	49.12			
People management	Students	60	54.28	1033.000	-2.050	.040
	Trainers	41	46.20			
Emotional intelligence (EQ)	Students	60	50.32	1189.000	-0.505	.614
	Trainers	41	52.00			
Friendliness	Students	60	58.00	810.000	-3.111	.002
	Trainers	41	40.76			
Tolerance	Students	59	55.63	907.000	-2.370	.018
	Trainers	41	43.12			
Critical thinking	Students	60	53.73	1066.500	-1.742	.082
	Trainers	41	47.01			
Patience	Students	60	54.95	993.000	-1.795	.073
	Trainers	41	45.22			
Honesty/ integrity	Students	60	50.43	1195.500	-0.483	.629
	Trainers	41	51.84			
Teamwork	Students	60	53.08	1105.000	-0.953	.341
	Trainers	41	47.95			
Flexibility	Students	60	52.23	1156.000	-0.577	.564
	Trainers	41	49.20			
Conflict management	Students	59	53.58	1028.000	-1.627	.104
	Trainers	41	46.07			
Mathematical skills	Students	60	49.84	1160.500	-0.516	.606
	Trainers	41	52.70			
Complex problem-solving skills	Students	60	49.31	1128.500	-0.824	.410
	Trainers	41	53.48			
Listening	Students	60	50.58	1204.500	-0.294	.769
	Trainers	41	51.62			
Compassion	Students	60	53.28	1093.000	-1.057	.290
	Trainers	41	47.66			
Boldness	Students	60	54.10	1044.000	-1.361	.174

	Trainers	41	46.46			
Leadership skills	Students	59	54.84	953.500	-1.997	.046
	Trainers	41	44.26			
Negotiation skills	Students	59	59.68	668.000	-4.069	.000
	Trainers	41	37.29			
Responsibility/ reliability	Students	60	52.90	1116.000	-1.066	.286
	Trainers	41	48.22			
Social media use skills	Students	60	50.91	1224.500	-0.040	.968
	Trainers	41	51.13			

The next question, which was qualitative, focused on the skills that both groups of participants felt that industrial/ organisational psychology graduates needed in order to be prepared for the work environment. Table 12 summarises the responses for each group in this regard.

For both students and trainers, practical work experience (students: 31.7%; trainers: 29.3%), interpersonal, social, and communication skills (students: 21.7%; trainers: 14.6%), emotional intelligence (students: 8.3%; trainers: 14.6%), problem-solving (students: 8.3%; trainers: 12.2%), analytical and critical thinking (students: 6.7%; trainers: 12.2%), boldness (students: 10%; trainers: 7.3%), and business acumen (students: 5%; trainers: 9.8%) were considered to be critical skills that industrial/ organisational psychology graduates need to thrive in the workplace. Examples of this are captured in the following responses:

“More practical work in university – university focuses on the theoretical content / assignments / case studies. We should engage with practical examples / go out to organisations and engage with these assignments...” (Participant 8, 23, Masters student).

“Graduates tend not to have practical skills so they just need to get some work experience” (Participant 66, age not given, lecturer).

“...how to engage with people” (Participant 2, 24, Honours student).

“Presentation skills, effective preparation of presentations and reports – presenting key information in a consumable way...” (Participant 107, 33, supervisor).

“Personal development, perhaps work with their EQ to create individual awareness; reflective work...” (Participant 74, 53, lecturer). *“Better critical thinking and complex problem solving skills”* (Participant 20, 22, undergraduate student).

“...commercial acumen (understanding the business of business)...” (Participant 88, 49, employer).

Table 12

Themes for the skills needed to prepare graduates for the work environment for students (n=60) and trainers (n=41)

Skills categories		Students (n = 60)		Trainers (n = 41)	
Transferable/ functional skills	Communication skills	f	%	f	%
	Interpersonal/communication skills (social skills)	13	21.7%	6	14.6%
	Negotiation skills	4	6.7%	2	4.9%
	Listening	-	-	4	9.8%
	Thinking skills	f	%	f	%
	Problem-solving	5	8.3%	5	12.2%
	Analytical/ critical thinking	4	6.7%	5	12.2%
	Decision-making	-	-	1	2.4%
	Strategic thinking	-	-	2	4.9%
	Management skills	f	%	f	%
	People management	6	10.0%	1	2.4%
	Leadership	3	5.0%	1	2.4%
	Entrepreneurship	1	1.7%	-	-
	Creativity	f	%	f	%
	Creativity/ innovation	-	-	1	2.4%
Personal traits/ attitudes (soft skills)	Personal skills/ competencies	f	%	f	%
	Time management	2	3.3%	-	-
	Flexibility	-	-	4	9.8%
	Self-reflection	-	-	1	2.4%
	Growth/ development/ learning	-	-	3	7.3%
	Personality traits	f	%	f	%
	Grit/ perseverance/ resilience	1	1.7%	1	2.4%
	Honesty/ integrity	1	1.7%	1	2.4%
	Boldness/ confidence	6	10%	3	7.3%
	Responsibility/ reliability/ trust	1	1.7%	-	-
	Diligence/ hardworking	-	-	1	2.4%
	Positive attitude	-	-	1	2.4%

Knowledge based (technical skills)	Social skills/competencies	f	%	f	%
	Teamwork/ collaboration	1	1.7%	-	-
	Emotional intelligence (EQ)	5	8.3%	6	14.6%
	Maturity	-	-	1	2.4%
	University training	f	%	f	%
	Statistical/ research skills	1	1.7%	2	4.9%
	Public speaking	1	1.7%	1	2.4%
	Ethics	1	1.7%	1	2.4%
	Counselling	1	1.7%	-	-
	Supervisor training	f	%	f	%
	AI/ tech-based skills	1	1.7%	1	2.4%
	Practical experience/ business experience/ job-shadowing/ job-mentorship	19	31.7%	12	29.3%
	Business acumen	3	5.0%	4	9.8%
	Other	f	%	f	%
	Understanding of the legal system	1	1.7%	-	-
	Community involvement	1	1.7%	-	-
	Policy design	1	1.7%	-	-
	Unsure	-	-	1	2.4%
	Many skills (unspecified)	-	-	1	2.4%
	Missing Data	f	%	f	%
	No response	3	5.0%	1	2.4%

Student participants also identified people management skills (students: 10%; trainers: 2.4%) as important for graduates whereas fewer trainers identified this as an important skill. Trainers identified flexibility (students: none; trainers: 9.8%); listening (students: none; trainers: 9.8%); and growth, development, and learning (students: none; trainers: 7.3%) as important for graduates whereas no students identified these as important skills. Some examples of this are:

“How to deal with people...maybe some more concrete or formal training on the different personalities which you can encounter and how to deal with them in a professional manner...” (Participant 40, 24, student intern).

“...openness to experience and agility...” (Participant 106, 25, supervisor).

“...listening skills training to diagnose problem statements that are not obvious from first interactions...” (Participant 87, 37, supervisor).

Participants in the trainers group were further asked to give reasons as to why they believed that these skills would be important for industrial/ organisational psychology graduates to possess. Table 13 captures these reasons.

The data in Table 13 suggests that the main reasons that trainers felt that industrial/ organisational psychology graduates would require the skills they felt were important were because they saw these as foundational and/or beneficial. The main reasons reported were that the skills were necessary to be effective or credible as an IOP (34.2%), the skills would increase exposure and the ability to apply theory in practice (31.7%), the skills would lead to a better understanding of the business context and the needs of employers and employees (19.5%), and the skills would help graduates to be flexible and adaptable in the workplace (19.5%). Examples of this are captured in the following responses:

“Understanding the business context, and having the consulting skills to show up effectively in this context are important for credibility...” (Participant 88, 49, supervisor).

“Seeing the theory in action and realizing the organization dynamics makes it more clear where you fit in and how you would need to apply your specific skill set to make a sustainable impact” (Participant 82, 31, lecturer).

“They need to understand the balance between people needs and the organisational needs” (Participant 92, 61, supervisor).

“I/O psychologists will be confronted with novel problems. There are no ready-made recipe-like solutions to these problems. Graduates have to be able to theorise with their available reservoir of theoretical knowledge to infer/derive solutions” (Participant 68, 63, lecturer)

“The more they get exposed to real life issues- the Better they can adapt and react” (Participant 94, 45, supervisor).

Table 13*Themes for reasons for the skills needed to prepare graduates for the work environment for trainers (n=41)*

Themes		
Foundational/ beneficial	f	%
Necessary skill to be an effective IOP/ for credibility	14	34.2%
More exposure/ better able to apply theory in practice	13	31.7%
Better understanding of the business context/ needs of employers and employees	8	19.5%
Helps to be flexible/ adaptable	8	19.5%
Helps to adopt a leadership role/ make an impact	2	4.9%
Helps to develop the right attitude	1	2.4%
Training	f	%
Lacking/ not emphasised enough in education	3	7.3%
Can be taught/ developed over time	2	4.9%
Missing	f	%
No response	3	7.3%

Participants in the study were also asked to share their perceptions of the skills that they believed would give industrial/ organisational psychology students a competitive advantage in the workplace or the most important skills that lecturers expected their students to have when graduating. Table 14 gives a summary of the skills identified by both groups.

Table 14*Themes for important/ competitive skills for students (n=60) and trainers (n=41)*

Skills categories		Students (n = 60)		Trainers (n = 41)	
Transferable/ functional skills	Communication	f	%	f	%
	Interpersonal/ communication skills (social skills)	8	13.3%	1	2.4%
	Negotiation	1	1.7%	1	2.4%
	Listening	2	3.3%	2	4.9%
	Analytical/ critical thinking	f	%	f	%
	Problem-solving	4	6.7%	5	12.2%
	Analytical/critical thinking	23	38.3%	10	24.3%
	Decision-making/ good judgement/ deductive and inductive reasoning	2	3.3%	1	2.4%
	Strategic thinking	1	1.7%	1	2.4%
	Intelligence	1	1.7%	1	2.4%
	Interpretative skills	1	1.7%	-	-
	Management	f	%	f	%
	People management	4	6.7%	1	2.4%
	Leadership	3	5.0%	2	4.9%
	Creativity	f	%	f	%
	Creativity/ innovation	7	11.7%	1	2.4%
Personal traits/ attitudes (soft skills)	Personal skills/competences	f	%	f	%
	Time management	6	10.0%	1	2.4%
	Flexibility/ adaptability	2	3.3%	1	2.4%
	Self-reflection	2	3.3%	-	-
	Personality traits	f	%	f	%
	Grit/ perseverance	3	5.0%	-	-
	Honesty/ integrity	2	3.3%	5	12.2%
	Boldness/ confidence	2	3.3%	2	4.9%
	Responsibility/ reliability	1	1.7%	-	-
	Diligence	2	3.3%	1	2.4%

Knowledge based (technical skills)

Curiosity/ inquisitiveness	1	1.7%	-	-
Proactive	-	-	1	2.4%

Social skills/ competencies	f	%	f	%
Tolerance	3	5.0%	-	-
Compassion	2	3.3%	2	
Teamwork/ collaboration	5	8.3%	-	-
Conflict management	2	3.3%	-	-
Emotional intelligence/ empathy	6	10.0%	6	14.6%
Maturity	-	-	1	2.4%

University training	f	%	f	%
Statistical/ research skills	6	10%	5	12.2%
Theoretical understanding	1	1.7%	2	4.9%
Writing and presentation skills	3	5.0%	1	2.4%
Ethics	-	-	1	2.4%
Counselling	-	-	1	2.4%
Knowledge	1	1.7%	1	2.4%
HR/ employee relations knowledge	-	-	2	4.9%
Academic performance	1	1.7%	-	-
Supervisor training	f	%	f	%
Practical/ business experience	4	6.7%	4	9.8%
Business acumen	1	1.7%	-	-

Other	f	%	f	%
Capacity to pass on useful skills	1	1.7%	-	-
Uncertain/ unclear	-	-	4	9.8%
All of the above	-	-	1	2.4%

Missing Data	f	%	f	%
No response	5	8.3%	2	4.9%

Table 14 shows that both students and trainers perceived analytical/critical thinking (students: 38.3%; trainers: 24.3%); emotional intelligence and empathy (students: 10%; trainers: 14.6%); statistical and research skills (students: 10%; trainers: 12.2%); problem-solving (students: 6.7%; trainers: 12.2%); and practical or business experience (students: 6.7%; trainers: 9.8%) to be skills that would give industrial/organisational psychology students a competitive advantage or that would be important for lecturers for graduates to have. Some examples of this are:

“Critical thinking, research, problem solving, deductive and inductive reasoning”

(Participant 29, 25, student intern).

“Empathy and critical understanding” (Participant 10, 23, Masters student).

“Critical thinking skills and research skills” (Participant 79, 59, lecturer).

“Empathy and real experience” (Participant 104, 48, supervisor).

Students felt that interpersonal and communication skills (students: 13.3%; trainers: 2.4%); creativity and innovation (students: 11.7%; trainers: 2.4%); time management (students: 10%; trainers: 2.4%); and teamwork and collaboration (students: 8.3%; trainers: none) were more important or competitive than trainers; and trainers felt that honesty and integrity (students: 3.3%; trainers: 12.2%) were more important or competitive than the students. Some examples of this are:

“Listening, communication and management skills” (Participant 38, 21, undergraduate student).

“A creative and out of the box thinking style” (Participant 36, 22, Honours student).

“Time management, tolerance, teamwork” (Participant 1, 26, Masters student).

“...integrity first...” (Participant 67, 35, lecturer).

As part of the questionnaire, both groups were also asked to share their views on the skills that they perceived supervisors would expect of industrial/organisational psychology graduates. Table 15 summarises the themes from the participants' responses to this question.

Both students and trainers felt that supervisors would expect industrial/ organisational psychology graduates to have analytical and critical thinking skills (students: 21.7%; trainers: 19.5%); problem-solving skills (students: 13.3%; trainers: 14.6%); practical and business experience (students: 13.3%; trainers: 12.2%); and emotional intelligence and empathy (students: 6.7%; trainers: 9.8%). Some examples of this are:

“Critical thinking and complex problem solving skills” (Participant 20, 22, undergraduate student).

“Previous workplace experience” (Participant 62, 29, student intern).

“For the students to be able to understand the workplace quickly and to become high performing individuals soon. This can only be done by earlier exposure to workplace...” (Participant 72, 24, lecturer).

“Kindness, empathy, compassion, friendly manners, good positive attitude, someone who works well with others and can handle their emotions well” (Participant 53, 24, undergraduate student).

Students felt that supervisors would expect flexibility and adaptability (students: 23.3%; trainers: 9.8%); interpersonal and communication skills (students: 18.3%; trainers: 7.3%); theoretical understanding (students: 8.3%; trainers: 4.9%) and teamwork and collaboration (students: 8.3%; trainers: none) more than trainers did. Trainers felt that supervisors would expect knowledge about human and employment relations (students: 8.3%; trainers: 22%) and business acumen (students: 1.7%; trainers: 9.8%) more than students did. Some examples of this are:

“...people person, flexible to change, resilient and a team worker” (Participant 11, 23, Masters student).

“In depth knowledge of subject matter...” (Participant 54, 21, undergraduate student).

“They want them to fulfil [sic] HR roles and functions” (Participant 74, 53, lecturer).

“Business application that translates to business goals...” (Participant 85, 37, supervisor).

The supervisor group (n = 21) was also asked if they felt that industrial/ organisational psychology graduates were typically adequately prepared to fulfil their duties as IOPs in the work environment. There were 7 supervisors (33.3%) who answered ‘yes’ to this question and 14 supervisors (66.7%) who answered ‘no’. Table 16 summarises the themes for the reasons that the supervisors gave for these responses.

Table 15

Themes for skills that supervisors expect graduates to have for students (n=60) and trainers (n=41)

Skills categories		Students (n = 60)		Trainers (n = 41)	
Transferable/ functional skills	Communication	f	%	f	%
	Interpersonal/ communication skills (social skills)	11	18.3%	3	7.3%
	Negotiation	1	1.7%	1	2.4%
	Listening	1	1.7%	2	4.9%
	Counselling	1	1.7%	-	-
	Analytical/ critical thinking	f	%	f	%
	Problem-solving	8	13.3%	6	14.6%
	Analytical/critical thinking	13	21.7%	8	19.5%
	Decision-making/ good judgement/ deductive and inductive reasoning	3	5.0%	1	2.4%
	Intelligence	1	1.7%	2	4.9%
	Accuracy	-	-	1	2.4%
	Management	f	%	f	%
	People management	3	5.0%	2	4.9%
	Leadership	3	5.0%	-	-
	Creativity	f	%	f	%
	Creativity/ innovation	4	6.7%	2	4.9%
Personal traits/ attitudes (soft skills)	Personal skills/competences	f	%	f	%
	Time management	3	5.0%	-	-
	Flexibility/ adaptability	14	23.3%	4	9.8%
	Self-reflection	1	1.7%	-	-
	Multi-tasking	1	1.7%	-	-
	Growth/ development	3	5.0%	3	7.3%
	Personality traits	f	%	f	%
	Friendliness/ kindness	1	1.7%	-	-
	Patience	1	1.7%	-	-
	Grit/ perseverance	2	3.3%	-	-

Knowledge based (technical skills)

Honesty/ integrity	2	3.3%	1	2.4%
Boldness/ confidence	1	1.7%	3	7.3%
Responsibility/ reliability	1	1.7%	1	2.4%
Diligence	-	-	1	2.4%
Curiosity/ inquisitiveness	2	3.3%	-	-
Proactive	-	-	3	7.3%

Social skills/ competencies	f	%	f	%
Compassion	1	1.7%	-	-
Teamwork/ collaboration	5	8.3%	-	-
Conflict management	4	6.7%	-	-
Emotional intelligence/ empathy	4	6.7%	4	9.8%
Insightful	-	-	1	2.4%

University training	f	%	f	%
Statistical/ research skills	3	5.0%	-	-
Theoretical understanding	5	8.3%	2	4.9%
Writing and presentation skills	-	-	2	4.9%
Competence	2	3.3%	2	4.9%
Counselling	-	-	1	2.4%
HR/ employee relations knowledge	5	8.3%	9	22.0
Academic performance	1	1.7%	-	-
Psychometric assessment	3	5.0%	3	7.3%
Supervisor training	f	%	f	%
Practical/ business experience	8	13.3%	5	12.2%
Business acumen	1	1.7%	4	9.8%
Talent development	-	-	1	2.4%

Other	f	%	f	%
Financial skills	1	1.7%	1	2.4%
Informed	1	1.7%	-	-
Different based on the role hired for	-	-	1	2.4%
All of the above	-	-	2	4.9%

Missing Data	f	%	f	%
No response	2	3.3%	3	7.3%

For the internship supervisors who stated that they felt that industrial/ organisational psychology graduates were adequately prepared for the work environment, the key reasons that were given for this response were graduates being well prepared, having a strong academic background, and being able to think critically (19%) and graduates having experience and being encouraged to have practical training (9.5%). Some participants felt that graduates were only prepared to a degree and still needed supervision and experience (14.3%). Examples of this are captured in the following responses:

“...our universities are providing the best training to ensure that graduates learn about IO psychology sufficiently, they become well equipped to become critical thinkers” (Participant 102, 25, supervisor).

“...their academic background provides the platform from which they can develop a breadth of on-the-job experience” (Participant 107, 33, supervisor).

Table 16

Themes for reasons for graduate preparedness for supervisors (n=21)

Responses	Supervisors (n = 21)	
	f	%
Yes		
Graduates well prepared/ have a strong academic background/ can think critically	4	19%
Graduates have experience from their internship/ practical training is encouraged	2	9.5%
To a degree – graduates still need supervision and experience	3	14.3%
Depends on individual characteristics of the graduate	1	4.8%
No		
Training too theoretical/ not enough practical experience/ need on the job training	13	61.9%
Not able to think critically/ adapt	3	14.3%
Lack soft skills (interpersonal and communication skills)	1	4.8%
Not equipped to manage unexpected requirements	2	9.5%

A majority of internship supervisors in the sample (61.9%) indicated that the training was too theoretical and that graduates did not have enough practical experience as the primary reason for why they felt that graduates were not adequately prepared for the work environment. A few supervisors also felt that graduates were not able to think critically or adapt (14.3%) and were not equipped to manage unexpected requirements (9.5%). Examples of this are:

“Too much theory, very little practical application and understanding of the world of work...” (Participant 85, 37, supervisor).

“There needs to be more focus on practical application to be more prepared for the VUCA (Volatile, Uncertain, Complex and Ambiguous) workplace” (Participant 87, 37, supervisor).

Conclusion

This chapter has concisely and objectively reported on the main findings of the analyses of this study as these relate to the research questions posed. These findings will be discussed and interpreted further in the next chapter (Chapter Five).

Chapter Five

Discussion and Conclusions

The fifth chapter of this research report provides commentary and a reflection on the results obtained in this study, as detailed in Chapter Four of the report. The aim of this discussion is to highlight the key findings of the study as well as to interpret the meaning, relevance, and significance of the reported results in relation to the posed research questions and existing literature on this topic. This chapter will also reflect on the study's strengths, limitations, and implications. Finally, the directions for future research on this topic will be discussed followed by a conclusion to summarise the study and its findings.

Roles of Industrial/Organisational psychologists

As shown in Table 3 of Chapter Four, there were two key themes that students and trainers used to describe the role of industrial/organisational psychologists (IOPs), namely their psychological and facilitative roles in an organisation. Under the psychological role theme, IOPs were most frequently described in terms of their use of psychological theory, principles, and research to improve the workplace, solve problems, and understand human behaviour; whereas the facilitative role theme included aiding organisations and employees to maximise productivity and work effectively. In the former theme, the following subthemes emerged from the data, namely: to use psychological theory and research to improve the workplace, solve problems, and understand human behaviour; to provide workplace counselling and psychological support; and to carry out psychometric assessments and evaluations. The latter theme included the following four sub-themes: to help organisations and employees to maximise productivity and work effectively; to enhance employee physical and mental wellbeing and work-life balance; to improve staff motivation, morale, work engagement, job satisfaction, commitment, and create a positive work environment; and to facilitate organisational and employee development and workplace training. Furthermore,

although the theme of organisational roles was generally the least mentioned amongst the three themes, there were two subthemes within this theme that respondents frequently mentioned, namely: to manage human resources strategically, align organisational and individual goals, and facilitate organisational strategic planning; and to mediate between the organisation and employees, balance the welfare of all parties, and improve employment and labour relations.

The psychological role theme is especially common in literature and is consistent with the descriptions expressed by the American Psychological Association of I/O psychology as “the scientific study of human behaviour in organisations and the workplace” which “focuses on deriving principles of individual, group and organisational behaviour and applying this knowledge to the solution of problems at work” (APA, 2022). Another example that is consistent with this theme is Proctor & Vu (2019), who argue that research is an integral part of IOPs fulfilling their role of solving workplace problems. Generally, literature supports the notion that I/O psychologists primarily fulfil the role of understanding human behaviour and appropriately addressing workplace issues (Aamodt, 2013; APA, 2022; SIOPSA, 2023). The psychological role theme also directly aligns with one of the HPCSA’s minimum competencies for I/O psychology trainees, namely 1) problem diagnostic and intervention planning and 2) research (HPCSA, 2019).

The facilitative role theme is also aligned with the HPCSA’s minimum competencies for I/O psychology trainees, namely 1) intervention design and 2) professional practice (HPCSA, 2019). The literature however also suggests that IOPs are not as frequently described in terms of this facilitative role as they are in terms of their psychological roles (Aamodt, 2013; APA, 2013; 2022; Cunningham, 2010; Government Gazette, 2018; Oliveira, 2020; SACAP, 2019; SIOPSA, 2023). More recent literature does, however, suggest that the facilitative role of IOPs in the workplace will continue to be of critical importance; particularly roles such as

performance management and employee health and wellbeing (Coetzee & Veldsman, 2022; Kniffin et al., 2020; Oosthuizen, 2022; Stark, 2021). This is due to the way that the world of work is becoming increasingly digitalised, affecting the quality and quantity of both work and employees (Ghislieri et al., 2018; Meske & Junglas, 2021; Oosthuizen, 2022). One such example can be found in the recent introduction of remote and hybrid work, which has placed a unique demand on IOPs to design and implement interventions that will balance both the productivity and wellbeing of employees (Chanana & Sangeeta, 2020; Meske & Junglas, 2021). These facilitative roles are further compellingly affirmed by the two subthemes that were most frequently mentioned by participants, which were helping organisations and employees to maximise productivity and work effectively, and enhancing employee physical and mental wellbeing and work-life balance.

Although students and trainers generally identified similar roles for IOPs, a noteworthy difference was seen in the reasons that each group provided for why they believed IOPs have an important role to fulfil in the workplace. For students, the value of IOPs lay in the intermediary role that they fulfil between employers and employees, whereas for trainers, the significance of IOPs to the workplace was inherent due to the unique knowledge and expertise that they possess. It is plausible that this difference is a result of each group's perception of the work environment and what employers may require of IOPs. For students, this view may be based solely on their theoretical understanding of the role of IOPs whereas trainers may be drawing from their own personal experience and interactions with employers in the real world of work (Flanagan, 1947; Ford et al., 1986; Rynes et al., 2005; Schreuder & Coetzee, 2010; van Vuuren, 2010). It could be that the curriculum that I/O psychology students are exposed to places a greater emphasis on the change management and facilitative roles that IOPs fulfil, whereas trainers may likely have more experience with the South

African workplace and consequently perceive the value of IOPs as being inherent to their unique knowledge, skills and contributions to organisations based on practical experience.

Both groups did nevertheless agree that managing the human component of the organisation; focusing on employee engagement, motivation, and performance; increasing productivity; and ensuring ethical and legal employment compliance were all important to the role of IOPs.

This perception is also consistent with the literature which suggests that these areas of expertise are and will continue to be an important part of the role that IOPs fulfil in the workplace (Chanana & Sangeeta, 2020; Coetzee & Veldsman, 2022; Cunningham, 2010; Ewing et al., 2019; Ghislieri et al., 2018; HPCSA, 2019; Oliveira, 2020; Shoenfelt et al., 2012; Steiner, 2013; Zelin et al., 2015c). The HPCSA's definition of I/O psychology is a case in point as it defines the profession as "the science and practice of professionals who function in organisational and occupational settings with an aim to ethically explain, assess and influence human behaviour and its reciprocity at individual, group and organisational levels, with all efforts directed at human flourishing and the sustainable development of all affected stakeholders" (HPCSA, 2019, p. 3). Furthermore, Chanana and Sangeeta's (2020) study also attests that new and ethically sound interventions are fundamental to the facilitation of employee engagement which remains especially important to organisations today. Therefore, in this view shared by participants, we see the facilitative role theme that participants frequently used in describing the role of IOPs reiterated.

Another issue that this study explored was the distinction between IOPs and human resource practitioners (HRPs). A key theme that both groups identified to distinguish between the two professions was in terms of their 'daily processes'. This included IOPs conducting research to formulate scientifically proven solutions and theories, conducting psychometric assessments, having a more individual understanding of employees, and using psychological expertise to improve the workplace, whereas HRPs were seen as performing day-to-day administrative

tasks and duties and being responsible for managing processes and technical aspects of work. Both groups also perceived a difference with regards to the scope and approach of these professionals, where IOPs were seen as having a more holistic scope and applying a more strategic approach. This understanding of the distinctive roles and qualities of these often-conflated professions matches with those provided in literature and suggests that IOPs have a reasonably well-defined identity even for those in the field with less exposure to the world of work (Coetzee & Schreuder, 2010; Olenick et al., 2018; Organizational Psychology Degrees, 2023b; van Zyl et al., 2016). Nevertheless, while none of the students reported on this perception, it is worth noting that a few trainers particularly emphasised the transactional nature of the roles and work that HRPs fulfil. Generally, the trainers group also appeared to possess a clearer and more consistent understanding of the role differences between the two professions whereas the students appeared to be less certain about these distinctions. This difference in clarity may also potentially be attributed to the degree of exposure that each group had had to working environments and the consequent roles played by I/O psychology and HR professionals in these environments. This disparity between the two groups may reflect the importance of real-world experience in delineating the roles played by IOPs relative to other professional roles in the workplace.

Students and trainers both seemed to primarily employ the core definitions of each of these professions as means of differentiating the two from each other (Augustyn & Cillie, 2008; APA, 2023a; Schreuder, 2001). Specifically, IOPs were seen as possessors and implementors of psychological knowledge and tools to resolve varied workplace issues whereas HRPs were seen as administratively implementing and managing the processes and practices that pertain to employees in the workplace (APA, 2013; Bernthal, 2023; Carless et al., 2009; Cunningham, 2010; Donald & Bleekers, 2012; Greenwood, 2017; Greenwood, 2018; Indeed,

2023; Oliveira, 2020; Shaerer, 2012; Smith et al., 2023; Smith-Barry, 2021; van Vulpen, 2023).

As shown in Table 6 of Chapter Four, both students and trainers rated organisational development, employee wellbeing and work life, change management, training, psychological assessments, motivation and rewards, and research as the most important roles that IOPs fulfil in the workplace. These findings are supported by literature and further reinforce the facilitative and psychological role themes highlighted in the qualitative findings (Coetzee & Schreuder, 2010; Gupta & Saxena, 2022; SACAP, 2019). The study also found that a significant difference between the ratings of students and trainers was established for only five of these seven roles, whereas change management and psychological assessments had no significant difference. This suggests that students and trainers perceived that the facilitative roles that IOPs perform in the workplace would take precedence over their psychological and organisational roles, a view that is inconsistent with that of I/O psychology bodies such as APA and SIOPSA (APA, 2023a; SIOPSA, 2023).

This discrepancy may be explained by the fact that IOPs perform diverse roles within organisations which may lead to different stakeholders valuing certain aspects of their roles differently. This discrepancy may, however, also be due to a potential gap between the perceptions and expectations of I/O psychology students, trainers, regulators, and employers more generally or uniquely in the South African context. Therefore, exploring whether similar patterns of differences are identified in larger and more diverse samples is very important, especially in light of the rapid changes in the workplace occurring as a result of the Fourth Industrial Revolution (4IR) (Oosthuizen, 2022; van Loo et al., 2001; Xu et al., 2018).

Overall, most of the participants felt that the role of IOPs had changed moderately in the past five years. A majority of students felt that the role of IOPs would change drastically in the next five years, and an equal number of trainers felt that the role of IOPs would change moderately or drastically in the next five years. These results reflect that both groups have shared perceptions of a certain level of continuity in the roles and work that IOPs will continue to fulfil in the workplace in South Africa but also see both the nature of the roles that IOPs fulfil and the types of skills that they will need to fulfil these roles changing quite swiftly in light of the rapid changes to the world of work that are occurring currently, including those associated with 4IR and the Covid-19 pandemic (Ivaldi et al., 2022; Coetzee & Veldsman, 2022; Mayer & Oosthuizen, 2020; Oosthuizen, 2022; Proctor & Vu, 2019; Rudolph et al., 2021).

Generally, the results of this study indicate a general congruence between the roles identified by participants and the roles identified for IOPs in the literature. There were, however, some specific emphases which potentially reflected the unique circumstances of the South African context as well as the differences between students and trainers in terms of work experience. It was also surprising that such a clear delineation existed, particularly for the trainers, between the role of IOPs and that of HRPs. It was also interesting to note that all of the participants perceived that the roles of IOPs would change at least moderately, if not drastically, in the next five years, suggesting a need to continue to investigate perceptions and understandings of these roles and to possibly update training materials and practices accordingly. Identifying more ways in which to expose I-O psychology students to a variety of work-related roles carried out by South African IOPs is also suggested, possibly through the inclusion of more work-related experience or greater contact with practicing IOPs.

Skills of Industrial/Organisational psychologists

In comparing how both groups rated the importance of the twenty-three skills listed in the survey, it is interesting to note that the trainers predominantly rated personal traits/attributes as most important whereas students focused slightly more on transferable/functional skills in terms of Beckhusen's (1993) skills taxonomy (Beckhusen, 1993; Kalyani, 2019; SkillScan, 2012a). For the student group, the skills they rated as most important were: people management, critical thinking, listening, responsibility and reliability, honesty and integrity, communication, time management, emotional intelligence, and conflict management. For the trainer group, the most important skills were: honesty and integrity, communication, responsibility and reliability, emotional intelligence, critical thinking, conflict management, listening, creativity, people management, and flexibility. The skills listed in both groups can thus be categorised as follows; transferable/functional skills (communication, critical thinking, conflict management, people management, listening and creativity), personal traits/attributes (responsibility and reliability, honesty and integrity, time management, emotional intelligence and flexibility), and no knowledge-based skills were mentioned.

Both students and trainers had the majority of their most important skills fall within the transferable/functional skills category followed by personal traits/attributes. All other skills were rated as most important skills by both groups except for time management by students and creativity and flexibility by trainers. In this regard, students mentioned a transferable/functional skill whereas trainers included both a transferable/functional skill and a personal trait/attribute that the other group did not. A closer look at the difference in the skills each group mentioned may once more suggest that students may have largely based their perceptions on their curricula focus and trainers arguably on their work-related experiences as well as their theoretical knowledge. Although the literature on I/O psychology

skills made mention of knowledge-based skills such as statistical methods/mathematics and social media; it appears that these skills are not perceived by both students and trainers to be of critical importance to the role of IOPs in the workplace (Coetzee & Veldsman, 2022; Crespin & Austin, 2002; Snyder & Cistulli, 2020; MyMajors, 2023; O*NET Online, 2023; Shoenfelt et al., 2012; Society for Industrial and Organizational Psychology, 2016; Steiner, 2013). This is slightly surprising but may change as developments related to smart technology, artificial intelligence, robotics, and algorithms (STARA) pick up pace in the next few years and become more integrated with everyday work and the roles of digital-era industrial psychologists (Coetzee & Veldsman, 2022; Oosthuizen, 2022).

When considering the top five most important skills that both groups included, four of the top five rated skills for each group were the same skills and also greatly overlapped with Zelin et al.'s (2015c) top five skills for IOPs in consulting (Zelin et al., 2015c); namely verbal communication, critical thinking, honesty and integrity, and trustworthiness (responsibility and reliability). For the trainer's group, honesty and integrity; responsibility and reliability, emotional intelligence (personal traits/attitudes), communication, and critical thinking (transferable/technical skills) were considered the top five skills for IOPs. For the students, people management, critical thinking, communication (transferable/technical skills), responsibility and reliability, and honesty and integrity (personal traits/attitudes) were their list of top five skills. The trainer's group placed more emphasis on personal traits and attributes which further suggests that trainers perceive IOPs to chiefly require soft skills to fulfil their role in the workplace. This view is accurately reflected in and supported by the assertions found in the literature, namely that soft skills are becoming increasingly essential to the work environment (Grugulis & Vincent, 2009; Maisiri et al., 2019; Succi & Canovi, 2020; van Laar, 2020).

Other skills that the student group rated as most important include time management, emotional intelligence, conflict management, teamwork, complex problem-solving skills, patience, tolerance, and leadership skills. These skills can be categorised in the following manner: time management, emotional intelligence, conflict management, teamwork, patience, and tolerance as personal traits and attributes; and complex problem-solving and leadership skills as transferable and functional skills. For the trainer's group, more skills that were rated as important included conflict management, listening, creativity, people management, flexibility, complex problem-solving skills, leadership skills, tolerance, and teamwork. These skills reflected more transferable and functional skills such as conflict management, listening, creativity, people management, complex problem-solving and leadership and fewer personal traits and attributes such as flexibility, tolerance, and teamwork. Overall, students had more personal traits and attributes (responsibility/reliability, honesty/integrity, time management, emotional intelligence, conflict management, teamwork, patience and tolerance) rated as most important whereas trainers had an similar number of transferable and functional skills (communication, critical thinking, listening, creativity, people management, complex problem-solving skills and leadership skills) and personal traits and attributes (honesty/integrity, responsibility/reliability, emotional intelligence, conflict management, flexibility, tolerance and teamwork) rated as important. Both groups had no knowledge-based or technical skills rated as most important.

These patterns of ratings are supported by the literature and suggest that soft skills are an integral part of IOPs' performance and function in the workplace, particularly in light of the changes and effects of 4IR (Grugulis & Vincent, 2009; Maisiri et al., 2019; Nasir et al, 2011; van Laar et al., 2020; Zelin et al., 2015b; Zelin et al., 2015c; Zelin et al., 2015d). This is considering the definition of 'soft skills' also known as 'twenty-first century skills' that Hurrell et al. (2013) and Rego (2017) provide, which include both transferable/functional

skills and personal traits/attributes; together with statements from scholars such as De Fruyt et al. (2015) and Neubert et al. (2015) who attest that these skills play a crucial role in IOP function. Examples of some of the skills that literature notes as being fundamental to IOPs which mirror those highlighted by students and trainers include communication, critical thinking, problem solving, integrity/ethics, teamwork, patience and creativity (Bakken, 2021; Florida National University, 2020; Organizational Psychology Degrees, 2023a; Psychology Jobs, 2023; van Laar 2020; Zelin et al., 2014; Zelin et al., 2015d; Zippia, 2023). It is possible that these skills are frequently mentioned by both study participants and scholars in literature because these skills are not only important to the role and function of IOPs but equally a requirement of IOP employers to meet the demands of the South African workplace (Bruett, 2006; Burke, 2014; Kaufman, 2013; Larson & Miller, 2011; Liston, 1998; Siekmann & Fowler, 2017; Succi & Canovi, 2020; van Laar et al., 2020; Zelin et al., 2014; Zelin et al., 2015a; Zelin et al., 2015b; Zelin et al., 2015c; Zelin et al., 2015d).

Quantitatively, the greatest distinction in the skills ratings between the two participant groups was seen in how students rated time management, people management, friendliness, tolerance, leadership skills, and negotiation skills as more important than the trainers. One of the main reasons for this difference in ratings may be that students typically lack the experience and tenure that trainers have. These particular skills seem to reflect the general skills that students receive in their university training irrespective of their chosen field of study, thus potentially speaking to a greater emphasis on graduateness whilst still studying ((Barrie, 2012; Glover et al., 2002; Steur et al., 20120). Trainers may have also placed a lesser emphasis on these skills owing to their knowledge and experience in the tasks that I/O psychologists carry out in the workplace, which extends beyond academic curricula.

With regards to the skills model employed in this study, time management, friendliness, and tolerance are categorised as personal traits and attitudes whereas people management,

leadership, and negotiation skills are classified as transferable and functional skills (Beckhusen, 1993; Kalyani, 2019; SkillScan, 2012a). Generally, students in the sample placed a greater emphasis on transferable and functional skills, however in this case the distribution was somewhat equal. It is nevertheless worth noting that amongst this difference in the most important skills ratings, for students negotiation skills (a transferable/functional skill) had the highest frequency rating. Although the skills highlighted by the student group are listed amongst the I/O psychology skills in literature, they are not as frequently cited as key IOP skills when compared with other types of skills, nor are they exclusively unique to the IOP profession (AMA, 2022; Bakken, 2021; Columbia Southern University, 2023; MyMajors, 2023; Skill Source Learning Partners, 2024; Sloyan, 2022). They could also arguably be clustered into the gradueness domains of scholarship and global and moral citizenship (Barrie, 2012; Coetzee, 2014). There is thus a clear sense that students' perspectives may have reflected the more general skills training they receive at university compared to the more specific skill sets identified by the trainers as relevant to direct IOP work.

With regards to the skills that the study participants felt IOPs required to be adequately prepared for the workplace, both groups frequently highlighted practical work experience; interpersonal, communication, and social skills; emotional intelligence; problem-solving; analytical and critical thinking; boldness; and business acumen. It is worth noting that the skills that were mentioned by both groups as foundational for preparing students for working as IOPs included transferable and functional skills (i.e., interpersonal, communication and social skills; emotional intelligence; problem-solving, analytical and critical thinking), knowledge-based and technical skills (practical work experience and business acumen), and personal traits and attitudes (emotional intelligence and boldness). The degree of agreement between the trainer and student groups for this set of skills was also notable, although trainers

did identify a few additional skills namely flexibility, growth and development (a personal trait/attribute) and listening (a transferable/functional skill) as important.

The skills highlighted by both groups are closely associated with graduateness (especially the domain of scholarship) and employability (Barrie, 2012; Coetzee, 2012; Coetzee, 2014; Weligamage, 2009). These skills include problem-solving, business acumen, analytical and critical thinking (scholarship) communication, interpersonal skills, and social skills (global and moral citizenship) (Barrie, 2012; Coetzee, 2014; Steur et al., 2016b). This is consistent with the generic skills listed in the literature, for example, Weligamage (2009) notes that skills such as problem-solving, communication, and analytical/critical thinking are typically associated with employability. Similarly, business acumen i.e. enterprising skills and an awareness of relevant national and international issues, is highlighted for both employability and graduateness (Coetzee, 2012; Liston, 1998). The findings also showed that both groups identified practical work experience as the most crucial skill that IOPs require for success in their roles in the workplace. The reason for this could be attributed to the fact that employers often place a strong emphasis and requirement for practical experience when hiring for most roles.

Similar skills were also perceived by both groups as being skills that would give I/O psychology graduates a competitive advantage in the job market i.e., analytical/critical thinking, emotional intelligence and empathy, statistical and research skills, problem-solving, and practical or business experience. It is worth noting that emotional intelligence and empathy, together with statistical and research skills, were considered advantageous to graduates. It could be that these skills in particular were emphasised as a result of them being a relatively scarce skill within the industry and/or South African context in general. For instance, in the literature emotional intelligence is particularly mentioned as a critical skill for IOPs (AMA, 2022; Psychology Jobs, 2024; Youth 4 Sustainability, 2019). Another potential

reason for this could be that the changes in the workplace that 4IR and the recent pandemic have introduced may require this particular skill set. Proctor and Vu (2019) specifically note that research has become a critical skill in these times. It is interesting to note that some of these skills also align with those identified as important for digital-era IOPs (Coetzee & Veldsman, 2022; Ivaldi et al., 2022; Oosthuizen, 2022).

Students and trainers did, however, also have different views on some of the skills that were seen as competitive. For instance, the trainers group felt that apart from the above-mentioned skills, honesty and integrity would also be a competitive advantage whereas students felt that interpersonal and communication skills, creativity and innovation, time management, and teamwork and collaboration would provide more of a competitive advantage. Generally, it is apparent that for the trainers' group, personal traits and attributes such as honesty and integrity were seen as vitally important and integral to the role and identity of IOPs as this consistently emerge as a theme for this stakeholder group. Not only is this particular trait advocated for by business executives and IOPs, but it may also suggest that the I/O psychology profession is perceived as being better suited for individuals who demonstrate this trait (Shoenfelt et al., 2012; Zelin et al., 2015c; Zelin et al., 2015d). The skills that the student group mentioned seem to align closely with those associated with employability and graduateness. Skills such as teamwork and collaboration are considered to be key employability skills by Weligamage (2009) and, although creativity and innovation are not explicitly mentioned, they could arguably be implied in skills such as flexibility and adaptability. For graduateness, scholars such as Coetzee (2012) account for the interpersonal and communication skills that the students mentioned and Liston (1998) mentions the skill of time management. Shoenfelt et al. (2012) also account for most of the competitive skills that both groups mentioned, noting ethical behaviour and integrity (honesty/integrity for the trainer's group), interpersonal sensitivity and general written communication (interpersonal

and communication skills), and time management amongst the twelve skills that they identified as critical to entry into an IOP internship.

Perceptions pertaining to supervisor expectations of I/O psychology graduates were quite similar between the two groups. Both groups felt that I/O psychology graduates should have analytical and critical thinking skills, problem-solving skills, practical and business experience, and emotional intelligence and empathy. However, the trainers' group also felt that knowledge-based skills such as knowledge in HR and employee relations together with business acumen would be expected of I/O graduates; an expectation that I/O psychology students did not mention. Instead, I/O psychology students felt that flexibility and adaptability would be expected by I/O psychology employers; a personal competency that Oosthuizen's (2022) study also noted as being crucial to the future role and skills of IOPs in the workplace. Additionally, the student group perceived that interpersonal, communication, and social skills; teamwork; and theoretical understanding would also be important to this stakeholder group. Although more general, the concept of theoretical understanding does overlap to some extent with the more specific knowledge of HR and employee relations identified by the trainers as important. These results suggest that students may use their training experience and interactions with supervisors to determine what skills may be expected of them; while I/O psychology trainers use their perceptions of employer expectations to determine their own. This may be owing to the fact that supervisors ultimately train their students to fulfil employer expectations (Coetzee & Veldsman, 2022; Hurrell, 2016). The expectations held by trainers may reflect the types of jobs and roles that they perceive IOPs in South Africa will be employed to fulfil in the workplace. This suggests that trainers may have more definitive IOP requirements compared to the generic expectations that students hold.

This inference is further supported by the fact that more than half of the supervisors who participated in this study also felt that I/O psychology students were not adequately prepared for their I/O psychologist roles in the workplace. One of the key reasons that the supervisors provided for their assertions were that I/O psychology graduates were deficient in the practical experience required to successfully manage their role as an IOP in the workplace. This 'practical experience' that supervisors refer to may very well include skills such as knowledge in HR and employee relations and business acumen as these knowledge-based skills are imparted through education, training, and job experiences (Beckhusen, 1993; Katz, 1974; SkillScan, 2012a). This finding also suggests that the current training curriculum of I/O psychology students is not entirely appropriately designed and may thus need to be restructured slightly in order to adequately prepare graduates to fulfil their roles in the workplace.

Conclusions and implications of the findings

The objective of this study was to explore the perceptions and expectations of I/O psychology students and trainers (i.e., lecturers and supervisors) with regards to the job role and job skills required of Industrial/Organisational psychologists (IOPs) in South Africa. A non-experimental, cross-sectional, descriptive, and survey-based approach was employed and a sample of 60 I/O psychology students and 41 I/O psychology trainers was obtained for this study ($n = 101$). The survey captured both quantitative and qualitative information and the data was analysed using both statistics and content analysis, with comparisons made between the student and trainer groups.

The key findings of this study were that students and trainers both primarily described the role of an IOP in terms of their psychological and facilitative roles in the workplace. Each

group, however, gave different reasons for the value that IOPs bring to the workplace, where students emphasised IOPs' mediatory role and trainers the unique knowledge that IOPs possess. Both groups also primarily distinguished IOPs from Human Resource professionals (HRPs) by the 'daily processes' that they fulfilled, noting that IOPs conduct research to formulate scientifically proven solutions and theories and use psychological expertise to improve the workplace. Students also rated most roles as more important than the trainers did and there was an agreement between both groups that the roles of IOPs would likely change at least moderately in the next five years.

Both students and trainers appeared to have a similar understanding of the role of IOPs in the workplace and this was in a manner that broadly aligns with general expectations as well as the roles stipulated by the HPCSA. It is important to note, however, that students were less able to distinguish between IOP roles that were most important than the trainers' group were. This most likely reflects the trainer's personal and practical IOP work experiences and conversely the student's lack thereof, highlighting the need to potentially revise and expand the syllabus and training that IOP students receive to accommodate for increased exposure to this. This is affirmed by the fact that both groups felt that students would be more adequately prepared for the workplace if they had more practical work experience. This deficit could potentially be addressed by affording IOP students the opportunity to have earlier and more frequent contact with their IOP trainers and other registered and practising IOPs, particularly IOP supervisors working in industry, so as to incorporate the development and expansion of IOP student work experience into the training curriculum. Such an experience may also be an opportunity for IOP stakeholders such as the HPCSA and universities offering I/O psychology to note and address any continuous developments and changes to the roles of IOPs in the workplace over the course of the years. Equally, this intervention could be an

opportunity for continued research on the roles fulfilled by I/O psychologists in South Africa even as the scale and impact of the Fourth Industrial Revolution (4IR) progresses.

With regards to the perceived job skills required of IOPs in South Africa, it was apparent from the data that trainers predominantly identified personal traits and attributes such as honesty and integrity, emotional intelligence and responsibility and reliability more frequently as most important, whereas students placed a greater emphasis on transferable and functional skills such as people management, critical thinking, and listening. Even when exploring the key differences in each group's quantitative ratings, there was a notable distinction in the rated importance of skills such as people management (a transferable/functional skill) for the students and emotional intelligence (a personal trait/attribute) for the trainers group. It is suspected that the difference in emphasis for each group could be attributed to the curricular focus and practical exposure of students and trainers and their relative IOP work experiences, reflecting possible developmental shifts in professional identity and skills emphases as students transition to become working professional IOPs. Both groups did, however, identify honesty and integrity, communication, responsibility and reliability, and critical thinking as the most important skills for IOPs generally; and neither of the groups mentioned any knowledge-based skills as being critically important to the role of IOPs in the workplace.

In considering what skills would be critical for adequately preparing IOP trainees for the workplace, both groups noted certain transferable/functional skills most frequently, including interpersonal, communication, and social skills; emotional intelligence; and problem-solving, analytical thinking, and critical thinking. Other skills mentioned included: practical work experience and business acumen (knowledge-based/technical skills) and boldness (a personal trait/attribute). The transferable/functional skills noted were also closely associated with gradueness and employability, which suggests that these may play a critical role in the

preparation of IOP students for the workplace, especially if employers seek out these skills when determining who to hire (Barrie, 2012; Coetzee, 2014; Steur et al., 2016b; Weligamage, 2009). IOP students were also perceived to have a competitive advantage in the workplace when possessing skills such as analytical and critical thinking and problem-solving (transferable/functional skills); emotional intelligence and empathy (personal traits/attributes); and statistical and research skills and practical or business experience (knowledge-based skills). Furthermore, both groups also perceived that IOP supervisors expected IOP graduates to have these same skills. A consistent set of skills was thus emphasised by both groups and implies that these skills are particularly fundamental to the training and practice of IOPs in the South African workplace and should be a focal point for development during IOP training and as part of the curriculum for this.

There was an interesting disagreement between the groups where trainers felt that supervisors would desire graduates to possess knowledge in areas such as human resources and employee relations and business acumen (knowledge-based/technical skills) and students conversely expected teamwork, flexibility, and adaptability (personal traits/attributes); interpersonal, communication, and social skills (transferable/functional skills); and theoretical understanding (knowledge-based skills). This observation was unique as generally trainers had expressed a consistent emphasis on personal traits and attributes for effective IOP function. Additionally, the emphasis on specific types of knowledge by the trainers relative to a more general focus on theoretical knowledge by the students could reflect specific jobs and/or roles that the trainers know or feel are available for IOPs in the SA context. This suggests that including this training focus in the syllabus could be useful in preparing IOPs for the workplace, however this may need to be balanced against the possibility of changes to the IOP role and skills over time. When supervisors who participated in the study were asked if they felt that IOP graduates were adequately prepared for the workplace, a majority of them

disagreed, owing particularly to the limited practical work experience that IOP graduates possess. This constant emphasis on the lack of practical experience alludes to this being a major gap in the current training and curriculum for IOPs that may urgently need to be addressed.

Strengths and limitations of the study

This study is a novel exploration of the perceptions of multiple stakeholders on the required job role and job skills of IOPs which provides greater insights and possible directions for the education and training of IOPs within the South African context.

The sample obtained for the study was generally appropriate as the objective was to understand the perceptions held by I/O psychology students, lecturers, and supervisors in South Africa with regards to the required job skills and roles of I/O psychologists. However the final sample size ($n = 101$) was relatively small, with relatively few representative from each stakeholder group. A larger sample size is ideal for the purpose of establishing generalisability and representativeness of the findings in survey-based studies, with both of these essential for evaluating the external validity of a study (Polit & Beck, 2010).

Generalisability refers to the degree to which the results of a study can be generalised to a larger population and representativeness refers to how well the sample represents the population (Polit & Beck, 2010). For this study, there was a low response rate to the online survey and the generalisability and representativeness of the findings is thus restricted. This low response rate may be attributed to various factors such as the response rate for online surveys being generally low, the researcher's choice of survey platform, and the lack of an incentive (Nulty, 2008; Fan & Yan, 2010; Göritz, 2006).

Although this study explored the perceptions and expectations of I/O psychology students and trainers (i.e., lecturers and supervisors), these categories of stakeholders are not entirely

exhaustive. The results of this study may thus also only reflect those of I/O psychology ‘academics’ and not necessarily those of I/O psychology governing bodies and societies, I/O psychologists practicing in various fields, I/O psychology employers and other employers, as well as departments or professions that frequently interact with I/O psychologists. The degree to which the sample represented the target populations of IOP students and trainers in terms of demographic characteristics such as gender, race, age, home language, and culture is also not clear and raises further concerns about the representativeness of the findings. It is important to note that the results of this study are restricted to the South African context and, even within this context, should be applied with caution given the absence of causal features in the design and limited generalisability and representativeness.

The survey method employed in this study also restricted the degree of depth in which the participants’ perceptions could be explored in that certain questions were close-ended and even though qualitative questions were included, participants may have been unwilling to write down their perceptions in extensive detail due to the effort involved. The method of data collection meant that there was no opportunity to explore participants’ responses in further detail or ask follow-up questions. Participants also had the freedom to choose which questions they preferred to report on, which further impacted the depth of information that could be collected. Furthermore, the five-point scale utilised for certain questions in the study may have not sufficiently captured the nuances in the perceptions of study participants with regards to the degree of importance in the rating of IOP roles and skills.

Despite this, it is important to note that the use of both qualitative and quantitative questions in the survey did allow for a greater degree of comparison and depth than either form of questions alone would have offered, and the range of questions addressed in the surveys did permit a detailed comparative analysis and for the research questions in the study to be addressed. The methods of analysis were carefully chosen and evaluated for their suitability

to address the research questions and meet the conditions of the data, and the study was carried out ethically with the utmost consideration for participants' welfare. Despite the limited generalisability and representativeness, the results do suggest some important points for consideration in future research and planning of IOP curricula.

Recommendations for future studies

Future research on this topic should consider including a greater variety of stakeholders to ensure a more diverse and holistic view of the perceived job role and skills required of IOPs such as I/O psychology students, I/O psychology trainers, IOPs practising in various fields and/or sectors, organisations employing IOPs, and I/O psychology board and society representatives, etc... (Mayer & Oosthuizen, 2020). Another possibility could be conducting a longitudinal study with IOP students with the aim of exploring their progressive training experiences on their road to qualifying as an I/O psychologist. Other studies could also extend the work of Coetzee and Veldsman (2022) by conducting surveys with the employers of I/O psychologists that aim to ascertain the circumstances under which they employ IOPs and what roles and skills they typically require of them. It may also be worthwhile to conduct research on the future trends for IOP work within the current context of 4IR, potential changes to the nature of IOP work in the future, and the unique contributions that IOPs could potentially make to the South African workplace, thereby building on the work of Oosthuizen (2022).

Future studies could also consider the sampling methods employed as well as exploring new ways of encouraging a higher response rate to the survey. An example of this could be partnering with leaders of I/O psychology boards, societies, and organisations to potentially facilitate a higher response rate from the respective stakeholders. Other study designs could

also possibly be explored such as a purely quantitative study that could infer more definite trends, employing interviews or focus groups with the relevant stakeholders, and performing evaluations of IOP training and internship programmes which could recommend specific and necessary changes to these on both an individual level and more generally.

Conclusion

This study has arguably laid a new stepping stone for future research in South Africa into this topic. In seeking to understand the perceptions and expectations of I/O psychology students and trainers with regards to the job role and skills of Industrial/Organisational psychologists in South Africa, this study has highlighted some of the possible congruences and disparities between these stakeholder groups that may provide valuable insights and future directions for research. These insights could possibly be of value to employers of IOPs, IOP training institutions, and IOP qualifying authorities. The findings of this study suggest that the curriculum of I/O psychology in universities together with the I/O psychology professional requirements set by the HPCSA, may require a degree of collaborative re-evaluation between various stakeholders to better ensure that I/O psychologists are appropriately prepared and equipped with the skills needed to fulfil their roles in the workplace.

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Appendices

Appendix A: Participant Information sheet



Psychology
 School of Human & Community Development
 University of the Witwatersrand
 Private Bag 3, WITS, 2050
 Tel: (011) 717 4500 Fax: (011) 717 4559



Good day

Date: _____

My name is Lerato Kekana and I am conducting research for the purposes of obtaining a Masters Degree in Organisational Psychology at the University of the Witwatersrand. As part of this degree I am required to complete a research project and present a research report on the information obtained. My research aims to investigate the various perceptions and expectations that are held by different sets of stakeholders with regards to the job skills and job roles of Industrial/Organisational (I/O) psychologists in the workplace.

To participate in this study, you must be either an I/O psychology student (undergraduate, Honours, Masters, and/or intern), an I/O psychology lecturer and/or supervisor, or an employer or recruiter of I/O psychology graduates. You will also need to be over the age of 18 and have access to a computer and the Internet. If you fit into one of the above groups and are willing to participate in the study, please use the appropriate link which will take you to an online survey to complete. The survey should take approximately 15 to 20 minutes to complete.

Please note that your participation in this study is completely voluntary and no benefits or risks are associated with choosing to participate in this study. No identifying information, such as your name or I.D. number is asked for and no-one at your university or organisation will be aware of whether you choose to participate or not. You will therefore remain completely anonymous and the data you provide will not be linked to you as an individual in any way. Your completed survey will not be seen by any other person and will only be processed by my supervisor and myself.

Completing and submitting the survey will be considered as informed consent to participate in the study and to use the data you provide as follows. The data collected will be reported in the form of a research report that will be submitted to the University of the Witwatersrand; this report will be made publicly available on the University's library website. The findings may also be reported in publications and conference proceedings. For all reports, the findings will be reported as general trends and no responses will be able to be linked to you as an individual. Some of the answers that you provide may be quoted directly – if your answer is quoted, we will make sure that the quote does not contain any information that could potentially identify you.

Please note that because the study is anonymous, it is not possible to give individual feedback. Feedback of the general results will be given in the form of a summary of the overall findings of the research. This summary can be emailed to you on request using the contact details below. With your permission, we would also like to store your responses permanently in an anonymous, electronic form and to possibly use this for future research projects.

If you have any questions or concerns, please feel free to contact me or my supervisor using the details below. Ethical queries can also be directed to the University of the Witwatersrand Human Research Ethics Committee (non-medical) – please contact Shaun Schoeman (011-717-4108; Shaun.Schoeman@wits.ac.za).

Your participation in this study will be greatly appreciated as your responses will provide information that could potentially help to improve the training and development of I/O Psychologists in South Africa. If you know of anyone else who fits into the above groups and who might be interested in completing the survey, please forward the invitation and this participant information sheet to them.

Yours sincerely,

Lerato Kekana

Supervisor: Dr Nicky Israel

Email: 1053778@students.wits.ac.za Email: Nicky.Israel@wits.ac.za

I have read the above information and consent to participate in this study on a voluntary basis. I also understand that I may withdraw at any point until submission of the questionnaire.

YES	NO
-----	----

Appendix B: Ethical Clearance Certificate

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

HUMAN RESEARCH ETHICS COMMITTEE (SCHOOL OF HUMAN & COMMUNITY DEVELOPMENT)

CLEARANCE CERTIFICATE

PROTOCOL NUMBER: MORG/19/012 IH

PROJECT TITLE:

Stakeholder perceptions of the job skills and job roles required by Industrial Psychologists in South Africa

INVESTIGATORS

Kekana Lerato

DEPARTMENT

Psychology

DATE CONSIDERED

30/08/19

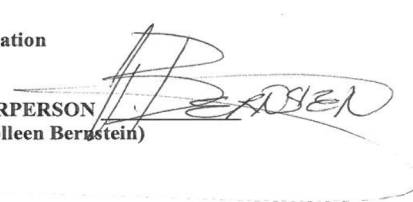
DECISION OF COMMITTEE*

Approved

This ethical clearance is valid for 2 years and may be renewed upon application

DATE: 30 August 2019

CHAIRPERSON
(Dr Colleen Bernstein)



cc Supervisor:

Dr Nicky Israel
Psychology

DECLARATION OF INVESTIGATOR (S)

To be completed in duplicate and **one copy** returned to the Secretary, Room 100015, 10th floor, Senate House, University.

I/we fully understand the conditions under which I am/we are authorized to carry out the abovementioned research and I/we guarantee to ensure compliance with these conditions. Should any departure be contemplated from the research procedure, as approved, I/we undertake to submit a revised protocol to the Committee.

This ethical clearance will expire on 31 December 2021

PLEASE QUOTE THE PROTOCOL NUMBER IN ALL ENQUIRIES

Appendix C: Brief Invitation to Participate

Good day

Date: _____

My name is Lerato Kekana and I am an Organisational Psychology Masters student at the University of the Witwatersrand. As part of my degree, I am doing a study to investigate the various perceptions and expectations that are held by different sets of stakeholders with regards to the job skills and job roles of Industrial/Organisational (I/O) psychologists in the workplace.

To collect data for the study, I would like to invite I/O Psychology students and/or interns, I/O Psychology lecturers and/or supervisors, and I/O Psychology graduate recruiters/ employers to please complete an online survey that should take approximately fifteen to twenty minutes.

If you fit into one of the categories above and are willing to participate in the survey, please click on the link below which will take you to the online survey with the participant information sheet (also attached) and survey questions. If you know of anyone else who fits into one of the categories above and who might be interested in participating, please forward this invitation to them.

[link addresses to be inserted]

If you have any questions or would like further information, please feel free to contact me or my supervisor. If you choose to participate in this study, your responses will be very much appreciated.

Thank you!

Lerato Kekana (1053778@students.wits.ac.za)

Supervisor: Dr Nicky Israel (Nicky.Israel@wits.ac.za)

Appendix D: Student Survey

Demographics

Please select/provide one answer that is most relevant to each question.

- I am currently completing my _____ in I/O Psychology
 - Undergraduate
 - Honours
 - Masters
 - Internship
- Age: _____
- Gender
 - Male
 - Female
 - Non-binary
 - Other (please specify):
- Race
 - Asian
 - Black/African
 - Coloured
 - Indian
 - White/Caucasian
 - Prefer not to say
 - Other

Questions

Please answer the questions listed below according to your current understanding and opinion. There are no wrong or right answers for these questions, and you are asked to answer them as openly and honestly as possible.

- Why did you decide to pursue a career/ studies in I/O Psychology?

- How would you describe the role of an I/O psychologist to someone with little or no knowledge of this career?

- Why do you think that I/O Psychologists are important to the workplace?

- Please rank the extent to which you consider each of the roles listed below to be **a core function of I/O psychologists** in the workplace (*1 – Not at all important 2 – Slightly important 3 – Fairly important 4 – Important 5 – Very important*)
 - a. Psychological assessment
 - b. Training
 - c. Recruitment and selection
 - d. Research
 - e. Counselling
 - f. Organizational development
 - g. Human factors/ ergonomics
 - h. Compensation and benefits

- i. Labour law compliance
 - j. Motivation and rewards
 - k. Coaching
 - l. Performance evaluation
 - m. Marketing/ consumer satisfaction
 - n. Employee wellbeing/ work life
 - o. Change management
- What do you believe differentiates HR practitioners from I/O psychologists?
-
- To what extent do you believe that the job role or function of I/O psychologists has changed over the past five years?
 - 1=not at all
 - 2=a little but not significantly
 - 3=moderately
 - 4=drastically
 - To what extent do you believe that the job role or function of I/O psychologists will change over the next five years?
 - 1=not at all
 - 2=a little but not significantly
 - 3=moderately
 - 4=drastically
 - Please rank how important (or relevant) you think each of the following skills are for I/O psychologists: *(1 - Not at all important 2 - Slightly important 3 - Fairly important 4 - Important 5 - Very important)*
 - a. Time management
 - b. Creativity
 - c. Entrepreneurship
 - d. Communication
 - e. People management
 - f. Emotional intelligence (EQ)
 - g. Friendliness
 - h. Tolerance
 - i. Critical thinking
 - j. Patience
 - k. Honesty/ integrity
 - l. Teamwork
 - m. Flexibility
 - n. Conflict management
 - o. Mathematical skills
 - p. Complex problem-solving skills
 - q. Listening
 - r. Compassion
 - s. Boldness
 - t. Leadership skills
 - u. Negotiation skills

- v. Responsibility/ reliability
- w. Social media use skills

- From the skills listed above and/or your own experience, please rank your top three (most important) skills for I/O psychologists in order of importance (with 1 as the most important). Please provide a reason for your order of ranking.
 1. _____
 2. _____
 3. _____
- In what ways do you believe that I/O psychologists can or should be equipped with these and other job skills?

- What skills would make you feel more ready or better prepared to work as an I/O psychologist?

- What are the most important skills you think lecturers expect I/O psychology students to have?

- Do you think that these expectations are realistic?
 - Yes
 - No
- What are the most important skills that you think employers expect I/O psychology graduates to have?

- Do you think that these expectations are realistic?
 - Yes
 - No
- Do you believe that the university that you currently attend or attended plays a role in the kind of expectations that your employer may have of you?
 - Yes - it increases expectations
 - Yes – it decreases expectations
 - No – it plays no role
- Please give a reason for your answer?

- Are there any other comments that you would like to make about the job roles and/or job skills expected of I/O psychologists or generally?

Thank you once again for your participation!

Appendix E: Lecturer Survey

Demographics

Please select/provide one answer that is most relevant to each question.

- I am currently a **lecturer/ supervisor** of _____ in I/O Psychology
 - Undergraduate students
 - Honours students
 - Masters students
 - Internship students
- Age: _____
- Gender
 - Male
 - Female
 - Non-binary
 - Other (please specify):
- Race
 - Asian
 - Black/African
 - Coloured
 - Indian
 - White/Caucasian
 - Prefer not to say
 - Other
- I am currently registered as an I/O psychologist
 - Yes
 - No

Questions

Please answer the questions listed below according to your current understanding and opinion. There are no wrong or right answers for these questions, and you are asked to answer them as openly and honestly as possible.

- Why did you decide to pursue a career in lecturing or supervising I/O psychology?

- How would you describe the role of an I/O psychologist to someone with little or no knowledge of this career?

- Why do you think that I/O Psychologists are important to the workplace/ organisations?

- Please rank the extent to which you consider each of the roles listed below to be **a core function of I/O psychologists** in the workplace (*1 – Not at all important 2 – Slightly important 3 – Fairly important 4 – Important 5 – Very important*)
 - a. Psychological assessment
 - b. Training
 - c. Recruitment and selection
 - d. Research

- e. Counselling
 - f. Organizational development
 - g. Human factors/ ergonomics
 - h. Compensation and benefits
 - i. Labour law compliance
 - j. Motivation and rewards
 - k. Coaching
 - l. Performance evaluation
 - m. Marketing/ consumer satisfaction
 - n. Employee wellbeing/ work life
 - o. Change management
- What do you believe differentiates HR practitioners from I/O psychologists?
-
- To what extent do you believe that the job role or function of I/O psychologists has changed over the past five years?
 - 1=not at all
 - 2=a little but not significantly
 - 3=moderately
 - 4=drastically
 - To what extent do you believe that the job role or function of I/O psychologists will change over the next five years?
 - 1=not at all
 - 2=a little but not significantly
 - 3=moderately
 - 4=drastically
 - Please rank how important (or relevant) you think each of the following skills are for I/O psychologists: *(1 – Not at all important 2 – Slightly important 3 – Fairly important 4 – Important 5 – Very important)*
 - a. Time management
 - b. Creativity
 - c. Entrepreneurship
 - d. Communication
 - e. People management
 - f. Emotional intelligence (EQ)
 - g. Friendliness
 - h. Tolerance
 - i. Critical thinking
 - j. Patience
 - k. Honesty/ integrity
 - l. Teamwork
 - m. Flexibility
 - n. Conflict management
 - o. Mathematical skills
 - p. Complex problem-solving skills

- q. Listening
- r. Compassion
- s. Boldness
- t. Leadership skills
- u. Negotiation skills
- v. Responsibility/ reliability
- w. Social media use skills

- From the skills listed above and/or your own experience, please rank your top three (most important) skills for I/O psychologists in order of importance (with 1 as the most important). Please provide a reason for your order of ranking.

- 4. _____
- 5. _____
- 6. _____

- In what ways do you believe that I/O psychologists can or should be equipped with these and other job skills?

- What skills do you believe would make graduates feel more ready or better prepared to work as an I/O psychologist?

- Please give a reason for your answer.

- Which of the above stated skills do you believe will set your students/interns apart from others or give them a competitive advantage in the workplace?

- Please give a reason for your answer.

- Does the university in which you lecture play a role in the kind of skills that you can or cannot impart to students?
 - Yes
 - No
- Please give a reason for your answer

- What constraints or freedom does your university provide with regards to the impartation of important skills?

- What do you believe are some of the expectations that employers have of I/O psychology graduates?

- Do you believe that these expectations are realistic?
 - Yes

- No
- Please give a reason for your answer.

- Are there any other skills (apart from those listed above) that you think would be necessary/
important for I/O psychologists in the workplace?

- Are there any other comments that you would like to make about the job roles and/or job skills
expected of I/O psychologists or generally?

Thank you once again for your participation!

Appendix F: Employer Survey

Demographics

Please select/provide one answer that is most relevant to each question.

- I am/ have been **an employer/recruiter/internship supervisor** of I/O Psychology graduates
 - Yes
 - No
- Age: _____
- Gender
 - Male
 - Female
 - Non-binary
 - Other (please specify):
- Race
 - Asian
 - Black/African
 - Coloured
 - Indian
 - White/Caucasian
 - Prefer not to say
 - Other
- I am currently registered as an I/O psychologist
 - Yes
 - No

Questions

Please answer the questions listed below according to your current understanding and opinion. There are no wrong or right answers for these questions, and you are asked to answer them as openly and honestly as possible.

- How would you describe the role of an I/O psychologist to someone with little or no knowledge of this career?

- Why do you think that I/O Psychologists are important to the workplace?

- Please rank the extent to which you consider each of the roles listed below to be **a core function of I/O psychologists** in the workplace (*1 – Not at all important 2 – Slightly important 3 – Fairly important 4 – Important 5 – Very important*)
 - a. Psychological assessment
 - b. Training
 - c. Recruitment and selection
 - d. Research
 - e. Counselling
 - f. Organisational development
 - g. Human factors/ ergonomics
 - h. Compensation and benefits
 - i. Labour law compliance
 - j. Motivation and rewards
 - k. Coaching
 - l. Performance evaluation

- m. Marketing/ consumer satisfaction
 - n. Employee wellbeing/ work life
 - o. Change management
- What do you believe differentiates HR practitioners from I/O psychologists?

- To what extent do you believe that the job role or function of I/O psychologists has changed over the past five years?
 - 1=not at all
 - 2=a little but not significantly
 - 3=moderately
 - 4=drastically
 - To what extent do you believe that the job role or function of I/O psychologists will change over the next five years?
 - 1=not at all
 - 2=a little but not significantly
 - 3=moderately
 - 4=drastically
 - Please rank how important (or relevant) you think each of the following skills are for I/O psychologists: *(1 – Not at all important 2 – Slightly important 3 – Fairly important 4 – Important 5 – Very important)*
 - a. Time management
 - b. Creativity
 - c. Entrepreneurship
 - d. Communication
 - e. People management
 - f. Emotional intelligence (EQ)
 - g. Friendliness
 - h. Tolerance
 - i. Critical thinking
 - j. Patience
 - k. Honesty/ integrity
 - l. Teamwork
 - m. Flexibility
 - n. Conflict management
 - o. Mathematical skills
 - p. Complex problem-solving skills
 - q. Listening
 - r. Compassion
 - s. Boldness
 - t. Leadership skills
 - u. Negotiation skills
 - v. Responsibility/ reliability
 - w. Social media use skills
 - From the skills listed above and/or your own experience, please rank your top three (most important) skills for I/O psychologists in order of importance (with 1 as the most important). Please provide a reason for your order of ranking.
 - 1. _____

2. _____
3. _____
- In what ways do you believe that I/O psychologists can or should be equipped with these and other job skills?

 - Do you feel that graduates are typically adequately prepared to fulfil their duties as I/O psychologist in the work environment?
 - Yes
 - No
 - Please give a reason for your answer.

 - What skills do you believe graduates still need to acquire so as to make them ready or better prepared for the work environment?

 - In what ways do you believe lecturers and institutions of higher learning can assist with regards to equipping graduates with the skills necessary for the workplace (i.e. how can the curriculum be improved to better equip graduates)?

 - What are some of the expectations that you believe I/O psychology graduates have of employers/recruiters/companies?

 - Do you think that these expectations are realistic?
 - Yes
 - No
 - Do you believe that I/O Psychology graduates have a clear/ adequate understanding of the expectations that employers have of them?
 - Yes
 - No
 - What are the most important skills you think lecturers expect I/O psychology graduates to have?

 - What are the most important skills that you think employers expect I/O psychologists to have?

 - Do you believe that the university that graduates attended plays a role in the kind of expectations employers have of them?
 - Yes - it increases expectations
 - Yes – it decreases expectations
 - No – it plays no role
 - Please give a reason for your answer?

 - Are there any other comments that you would like to make about the job roles and/or job skills expected of I/O psychologists or generally?

Thank you once again for your participation!