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Measuring Human Capital Development (HCD) Return on Investment (ROI), Risk, and Knowledge Gaps across selected Occupations in South Africa

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Abstract

Business challenges are experienced while measuring the economic value of Human Capital Development (HCD) as compared to their overall business performance and profitability. The HCD measurement challenge may be attributed to the knowledge gap on HCD measurement among employees and managers. A quantitative survey (n = 210) measured and compared management and employee knowledge on HCD Return on Investment (ROI), HCD risks, and HCD risk solutions in South Africa. Respondents ranged across occupational categories from various organizations. The findings indicated an awareness of HCD ROI measurement, risk, and risk remedies. However, there were deviations in that knowledge across occupational categories. General managers and entrepreneurs have better knowledge of HCD ROI measurement, risk identification, and risk remedies as compared to other occupations. HR, financial, hospitality, and learning and development professionals showed the lowest mean scores. The current study contributed to measure HCD ROI, risk, and occupational HCD knowledge gaps. The practical implication and contribution of the study was that managers and employees were made aware of the significance of measuring HCD ROI, risk, and remedies across all occupations. Moreover, further research is recommended to expand the research instrument and measure HCD knowledge across occupations in other countries in Africa and across the globe.

***Keywords*:** Human Capital Development (HCD) measurement, Return on Investment (ROI), HCD risks, HCD remedies, South Africa

Introduction

Twenty-first century business trends have shifted radically since the last century (Abu-Shawish et al., 2021). Globally, businesses have intensified

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their efforts to cope with the production efficiency challenges. The Fourth Industrial Revolution (4IR) era with innovative, ever-evolving technologies, the upheavals of the recent COVID-19 pandemic, and continuing restrictions in businesses and social activities present unprecedented business challenges (Okpata et al., 2021). There is an increasing need to develop a more sophisticated workforce in order to deliver innovative products and services to meet evolving workplace trends. Investment in Human Capital Development (HCD) is essential for the 21st-century workforce to be effective, efficient, and successful in most mobile and virtual workplaces (Chen et al., 2021). HCD is defined as the development of citizens' skills, knowledge, ability, and competencies to contribute to the economic and societal operational tasks in a country (Okpata et al., 2021; Sablok et al., 2017).

Although, HCD may be essential for the survival and growth of 21st-century businesses, executives, managers, professionals, and employees may be uncertain of the benefits of HCD interventions (Abu-Shawish et al., 2021). Even HCD professionals, often referred to as Learning and Development (L&D) experts, are unsure how to measure HCD Return on Investment (ROI) and risks associated with HCD investments (George & Ogunyomi, 2019). Furthermore, many managers and professionals including Human Resource (HR), HCD, and L&D managers are uncertain regarding the provision of solutions or remedies when HCD risks arise (Okpata et al., 2021). Business directors, managers, professionals, employees, and trainees may be unaware of the value in measuring and managing HCD ROI, risk, and remedies, especially in terms of its contribution to business strategies and objectives (Mara, 2020).

In many organizations, measuring training ROI and risks is non-existent due to negligence of duty or lack of capacity and knowledge to measure HCD criteria (Decker, 2021; George & Ogunyomi, 2019; Chukwu, 2016; Shuaibu & Oladayo, 2016). Capacity and knowledge factors often constrain decision-making, especially in determining the impact of HCD on business performance (Jasson & Govender, 2017) and developing human capital results in a country's socio-economic prosperity via industrial activities. Creating human resources into human capital is a strategic management tactic and it plays a vital role in promoting innovation, enhancing capability, and promoting employee productivity (Mara, 2020; Cinnirella & Streb, 2017). Twenty-first century, 4IR aligned

organizations have institutionalized HCD strategies. However, their challenge lies in measuring, managing, and improving their HCD ROI and minimizing HCD risks across all occupations.

The current study was motivated by the research gap concerning HCD stakeholder level of knowledge regarding ROI and operational risks within the African business environment (Ameyaw et al., 2019; Mayombe & Lombard, 2015). Furthermore, there was a lack of knowledge on identifying HCD risks, what constitutes ROI, and how to measure ROI and risk among organizations (Aluko & Shonubi, 2014). The current paper aimed to report on the empirical HCD study, conducted to examine the current knowledge on HCD ROI, risks, and remedies across occupations in South Africa. Following research questions were answered by using a quantitative survey:

1. Are managers and employees measuring HCD ROI in their businesses?
2. Are HCD risks being measured?
3. Are there any remedies to mitigate HCD risks?
4. What is the level of knowledge on HCD ROI and measurement across occupation across occupations on HCD ROI and risks measurement?

Literature review indicated that there was a wide gap concerning the level of awareness and current knowledge on how to measure investment in HCD, its risk, and remedies in most developing countries. Thus, the current study was designed to provide useful information in this regard. The study contributed by adding to the body of knowledge on the measurement of HCD ROI, risks, and solutions in African organizations. The practical contribution of this study is the awareness created for employers, managers, and employees on the economic value of HCD ROI, risks, and remedies measurement knowledge. This study includes a literature review, research method, results, discussion, conclusion, and limitations section.

Literature Review

Limited HCD Measurement Knowledge

Human Capital Development (HCD) attracts continuous cost and expenditure on part of the organization. Hence, HCD must be measured

and its ROI must be determined (Phillips et al., 2016). Since HCD costs impact businesses' profit and financial buoyancy, there is a need to justify HCD benefits after HCD investment. Despite concerns by business stakeholders and researchers' attempts to develop reliable models and methods in order to measure organizational HCD ROI and HCD risks, many organizations are challenged by HCD measurement. This is due to these knowledge gaps, that is, a lack of knowledge on how and what to measure, limited knowledge on how to calculate the economic value of HCD, and the inability to express HCD costs, benefits, ROI, and risks financially in terms of HCD contribution to business objectives (Decker, 2021; Peprah & Gunu, 2018; Robert, 2017).

The manager's level of knowledge must be increased regarding HCD measurement, especially concerning ROI and risk in the organization (Aluko & Shonubi, 2014). Currently, businesses in developing and emerging economies are experiencing difficulties and are unable to delineate the exact contribution and benefit of HCD to business profitability. This is attributed to the manager's perception and level of knowledge and lack of information on the consequences of not measuring HCD ROI (Alika & Aibieyi, 2014; Aluko & Shonubi, 2014). The argument here is not to diminish the contributions of HCD, especially how training interventions advance employee career development, rather to spotlight the significance of HCD knowledge, specifically HCD measurement knowledge amongst current workforces.

The research established the relationship between HCD and employee satisfaction, business performance, employee motivation, job commitment, increased performance, productivity, innovation, and career advancement (Decker, 2021; Mara, 2020; Feltrinelli et al., 2017). The concern is the gap in knowledge, the lack of information, and the lack of motivation of executives, managers, professionals, experts, and employees to measure HCD costs and benefits and calculate high or low ROI. Translating the development acquired by employees attending training in terms of the economic value that adds to the business profitability is neglected by managers and trainers (Breedt-Meree, 2017).

Scholars who favored the business ideology of HCD consistently maintained that the impact of training on business performance expressed in financial terms should be the justification for HCD interventions rather than the current rhetoric of training-for-learning (Ameyaw et al., 2019;

Soubjaki, 2017; Shuaibu & Oladayo, 2016). There is a growing concern about the wholeness and outcome of resources expanded on talent development HCD and workforce development. The call is for HCD success and failure to be measured and evaluated using the same parameters, such as productivity, strategic business goals, and business profitability measurements (Bukhari et al., 2017; Klein, 2016).

HCD Measurement and Economic Value

Morris (2015) found that a positive correlation exists between human capital efficacy and increased profit for the business. Soubjaki (2017) determined that a focus on high ROI results in efficient and effective HCD programs implemented in the organization. Shuaibu and Oladayo (2016) noted that in the continent of Africa, there is less evidence in research regarding the knowledge of quantifying the value of HCD contribution to the profitability of the organization. According to Robert (2017), when training ROI is low, the cost-benefit analysis calculated from HCD expenditure and benefits does not account for commensurable financial value. This means that the ROI measurement reveals evidence of a lack of improved capability and performance. This means that HCD risks are involved, resulting in a low ROI. When HCD risks are quantified, managed, and mitigated only then there would be a high HCD ROI for the business.

The economic value in terms of the ROI and measurement of HCD is non-existent in most organizations. If at all, the impact of HCD on business profitability may not be accurately calculated or measured by HR and line managers. Even managers and business owners seem to shy away from HCD measurement and its economic value. Studies revealed that only the first three levels of the HCD evaluation process, respondent satisfaction, learning, and knowledge application are measured by training providers (Khayinga & Mauthe, 2018; Ramiah, 2014). Aluko and Shonubi (2014) revealed that among businesses in Africa, managers face difficulty in expressing the positive and financial impact of learning from HCD due to a lack of knowledge on how HCD ROI and associated risks are measured alongside business results. Even HCD training professionals have limited awareness regarding the impact of resources (money, time, and productive hours) used in HCD interventions on performance and productivity (Chukwu, 2016). Beyond limited awareness and the challenge of what and how to measure HCD ROI, there is a concern that low HCD

ROI and lack of a business case on the HCD economic value could result in negative consequences for the managers concerned (Mara et al., 2018).

HCD and Business Strategy

HCD contributes to organizational effectiveness and business performance without question. However, using financial performance parameters alone to measure HCD contribution may be debatable. Integrating HCD benefits and risks with financial parameters has become an important business strategy globally. The valuable contributions of HCD are noted in creating a competitive business advantage, improving business assets, and better market positioning in the local and global economy (Khayinga & Muathe, 2018). HCD grows business performance by increasing specific attributes and qualities embodied in employees. A well-trained and developed workforce carries a definite increased financial value in the global market and is expected to serve as a source of future financial benefits for both employees and the employers. HCD is the driving force of business performance, innovation, and profitability in the 21st century in many ways (Bagienska, 2015).

However, linking HCD to business strategy, performance, and profitability remains challenging to most business leaders and managers. Ameyaw et al. (2019) noted that despite the availability of evidence indicating that HCD is beneficial to all stakeholders and related to the organization, most managers still struggle to measure HCD contributions and calculate the financial benefits of HCD investment in training as it relates to business performance. Roberts (2017) suggested designing training interventions towards performance-related activities. Training providers and managers then measure specific HCD with specific performance improvements. In order to measure whether HCD interventions impacted business strategy, performance across functional areas, teams, and individual performance must be quantifiably expressed in financial terms. The cost-benefit analysis is then financially comparable to the business performance, targets, and strategic goals.

There are specific and measurable attributes that are peculiar to the HCD of a business, that when measured, reveal the accurate status of business outcomes. HCD value creation characteristics that link to business strategy include flexibility and adaptability, enhancement of individual competencies, development of business core competencies, and

enhanced individual employability (Marimuthu et al., 2009). Many more attributes of HCD can be measured and linked to business strategy. HCD not only enhances the performance but culture, structure, and sustainability as well. By developing a skillful and competent workforce, businesses not just survive but thrive to gain global status (Peprah & Ganu, 2018).

It has been emphasized that irrespective of the magnitude of external market forces and competition in the business environment, a competently managed workforce evidenced by HCD can survive business challenges and record more success (Alika & Aibieyi, 2014). HCD is considered as one of the most vital tools necessary to optimize organizational performance and enhance business viability. HCD is also a source of dynamic capability. Businesses benefit from a responsive and innovative workforce that achieves and maintains a sustained competitive advantage when employees receive regular training and stay current with global trends (Ameyaw et al., 2019). A study conducted by Peprah and Gunu (2018) revealed that creativity, innovation, and improved performance are the outcomes of an efficient HCD strategy aligned to business strategy.

HCD is essential to business survival in the 21st century, 4IR workplace. For businesses to thrive and sustain a competitive advantage, especially in the era of radical technological advancement and unexpected changes in market reactions, managers must measure and evaluate HCD investments as it does for business profits and losses. HCD measurement is exceptionally difficult due to lack of knowledge on how to quantify its contribution to the overall business performance (Bagienska, 2015). Employers are interested in and aware of HCD investment, especially regarding the costs and benefits of training interventions. Thus, there is a call to measure and justify the value of HCD along with evaluating its contributions to business performance (Sabourin, 2017; Chukwu, 2016).

Difficulties in Measuring HCD Costs and Benefits

Despite the concerns and abundance of research on HCD benefits to business strategy, most businesses still find it challenging to measure the economic costs, benefits, and contributions of HCD investments (Little, 2014). This challenge of linking HCD to the profitability and market position of the organization is attributed to the insufficient manager and employee measurement knowledge. According to Bagienska (2015),

changes in business dynamics, such as market price, selling price, sales, technologies, consumer preferences, and other dynamics outside the control of the business lead to inaccurate HCD measurements. Furthermore, the HCD coefficient obtained from business financial reports may not accurately reflect a proper analysis of market and business changes as calculated in HCD ROI (Khayinga & Muathe, 2018).

Few businesses can successfully quantify, measure, and benefit from training ROI calculations (Phillips et al., 2016). The level of HCD measurement knowledge of managers and employees across occupational and professional domains is considered limited, especially in the developing and emerging economies (Peprah & Gunu, 2018; Shuaibu & Oladayo, 2016). For better measurement of HCD ROI, Bharwani et al. (2017) suggested that organizations need to increase employee knowledge and enhance their capacity in order to deal with and measure HCD ROI and risks. Feltrinelli et al. (2017) noted that the HCD ROI is challenging to assess and managers are often unsure how to implement ROI measurement and justify its impact on the business financial strategy.

Measuring HCD ROI

A cost-benefit analysis of HCD interventions reveals either low or high ROI. Measuring HCD ROI and risk assessment involves monetizing costs, benefits, and risks associated with HCD interventions. Line managers, HR professionals, financial experts, and even talent management specialists are challenged with measuring and calculating HCD ROI, risks, and remedies. This is partly due to the subjective nature and difficulty quantifying HCD costs, benefits, and threats along with the lack of knowledge and documentation of HCD contribution to individual and business performance (Decker, 2021; Philips, 2013).

Measuring HCD ROI is essential to quantify not only costs but benefits too. HCD contribution to organizational performance is unquestioned as effective HCD interventions serve as potential profit leverage for the organization (Klein, 2016; Ramiah, 2014). Beyond production efficiency and improved performance, HCD improves the market value and return on equity of businesses if efficiently managed (King & Mestit, 2015). The 4-level and 5-level HCD measurement models are the most widely used. Training Evaluation Models designed by Kirkpatrick and then Kirkpatrick and Phillips (Phillips et al., 2016).

Measuring HCD ROI comes after the previous levels of measuring learner satisfaction (level 1), learning (level 2), knowledge (level 3), and impact (level 4). Traditional evaluation methods are still practiced in most businesses, measuring levels 1-3 mostly, despite evidence that the outcomes of the conventional models are not satisfying (King & Nestit, 2015). Furthermore, Packard and Jones (2015) and Jasson and Govender (2017) noted that research had advanced the traditional evaluation models to include knowledge expertise, system changes, behavioral performance change, job satisfaction, group effectiveness, and the risk aspect of HCD into measurement criteria.

According to Phillips et al. (2016), HCD ROI must be measured as a monetary value. Yaqoot et al. (2017) reiterated that non-monetary returns of HCD and training interventions should also be measured. HCD measurement is expressed as either a positive or negative ROI after listing, quantifying, analyzing, and calculating the costs and benefits of HCD. Non-monetary or intangible ROI, such as job satisfaction, may be difficult to convert into monetary value; however, if measured accurately does save the business in terms of time and cost associated with future recruitment. In the case of a high turnover rate resulting from the lack of employee motivation, HCD interventions may improve ROI if it can be proved that turnover was reduced (Yaqoot et al., 2017). Measuring both tangible (monetary) and intangible (non-monetary) costs and benefits of HCD are essential in the accurate calculation of HCD ROI (Khayinga & Mauthe, 2018).

HCD tangible, monetary returns include increased optimum, efficient resource utilization, performance consistency, increase in workforce capacity, reduction of error and accidents during operations, and the financial gains from increased performance. Intangible HCD values or benefits include less supervision time, improved team spirit, increased employee motivation, job satisfaction, and enhanced business reputation (Bukhari et al., 2017; Breedt-Maree, 2017). According to Little (2014), organizations that invest in HCD also expect a return in terms of innovative and creative labor productivity and profitability.

There are attempts to model the HCD processes and measure HCD ROI and risks (Jasson & Govender, 2017; Phillips et al., 2016; Kirkpatrick & Kirkpatrick, 2009); however, these models failed to consider stakeholder knowledge on how to measure HCD costs, benefits, and

returns. For HCD evaluation models to be effective, the material, social, and personal costs and benefits must be translated into economic values. Furthermore, calculating the economic value of HCD ROI, risks, and risk mitigation solutions is insufficient and these values must be correlated with the contribution of HCD to the strategic business value (Chukwu, 2016).

HCD Risks and Remedies

Investment in HCD is expected to produce skills and competencies with a market value worthy of representing business production efficiency and performance. Rapid technological change and transformation in the 21st century, 4IR marketplace demands regular and continuous HCD if the workforce is to grow and businesses are to survive. Yet, HCD today may be obsolete tomorrow. Hence, HCD investment is risky. The value of HCD investment depends on its expected returns (benefits) and the risks involved in such an investment (Feltrinelli et al., 2017; Sabourin, 2017; Packard & Jones, 2015). Although, HCD investment is associated with an efficient and competent workforce, there is limited research on HCD risks and solutions to mitigate any risks (Mara et al., 2018; Soubjaki, 2017; Jasson & Govender, 2017; Shuaibu & Oladayo, 2016).

Breedt-Maree (2017) revealed that neither ROI nor risks associated with HCD are measured adequately in developing and emerging economies. Jasson and Govender (2017) and Mara et al. (2018) found that inaccurate measures of HCD ROI and risk among businesses in developing economies are poor predictors of accurate resource allocation, change management, and business growth. HCD may improve employee skill sets and competencies for optimum performance and contributions to business goals; however, HCD benefits are often accompanied by risks affecting the organization's dynamic capabilities and financial position (Mara et al., 2018).

The reason for poor HCD risk assessment, quantification, and measurement is that HCD measurement knowledge is unavailable in most occupations and HCD is grossly under-researched in the developing economies (Aluko & Shonubi, 2014). HCD risks were noted in the African hospitality sector (Jasson & Govender, 2017; Mara, 2020), calling for better policy decisions and investigating the phenomenon across all business sectors and workplace occupational categories. HCD evaluation

is under-researched and a lack of HCD measurement may be attributed to insufficient knowledge and capacity by professionals across the businesses. An HCD ROI and risk management model was proposed for African businesses, highlighting the need to measure HCD satisfaction, learning, application, impact, ROI as costs and benefits, and risks (Jasson & Govender, 2017).

HCD ROI and risks are not measured due to the limited knowledge among managers on how to identify and manage such risks (Bharwani et al., 2017; Roberts, 2017). A lack of proactively managing talent via talent engagement and talent strategies and not measuring the effect of HCD presents a higher risk factor for business HCD strategy effectiveness (Govender, 2018). HCD risks must be mitigated with HCD remedies or solutions if HCD investments are to make a positive business impact. It is essential for HCD ROI and risk to be measured and for HCD risk remedies to be designed, implemented, and measured as well if business and HCD strategies are to be effective (Govender, 2018). Continuous investment in HCD without adequate information on the expected benefits and risks to the business in monetary terms is a risk to the business (Bharwani et al., 2017). To this end, this study proposed the following hypotheses to investigate stakeholders' level of knowledge on how to measure HCD return on investment, identifying HCD risk, and HCD remedies to mitigate risks associated with HCD across selected occupations:

Ha: There is no statistical difference in occupation in the knowledge of measuring HCD returns on investment

Hb: There is no statistical difference in occupation in the knowledge of identifying HCD risk

Hc: There is no statistical difference in occupation in the knowledge of HCD risk remedies

Method

Design, Population, and Sample

The purpose of the current study was to examine the respondents' knowledge concerning HCD ROI, risk, and risk remedies. The research design was based on a quantitative survey. The population comprised of all the businesses operating across sectors of the economy in South Africa.

Business owners, entrepreneurs, consultants, managers as well as employees across occupational and professional jobs in South Africa were targeted for the study.

A convenient sampling strategy was employed to collect the data across various occupations based on the availability and willingness of the respondents. A total of two hundred and ten (n=210) responses were gathered comprising business owners, entrepreneurs, line and operational managers, administrative and general service employees, learning and development professionals, education service providers and tutors, finance and marketing professionals, and hospitality workers among others. Respondents were aged between 18 to 58 years with a mean age of 30 years. The majority (63.3%) were females. More than 50% of the respondents held bachelor's degrees. Over 40% of respondents were in administrative and general service professional occupations.

Instrument and Procedure

A structured self-designed survey questionnaire was used in the current study. The survey comprised four sections: Section A: Biographic data; Section B: HCD ROI; Section C: HCD risks; and Section D: HCD remedies. Each section contained 10-item statements on variables related to HCD. The respondents were requested to use the 5-point Likert scale ranging from "*Strongly agree*" (5) to "*Strongly disagree*" (1) and "*Continuously*" (5) to "*Not at all*" (1) to rate each statement. Questionnaires were distributed among willing respondents during HCD interventions in businesses. The respondents completed their questionnaires independently of researcher support and completed questionnaires were handed over to researchers or trainers.

The reliability and internal consistency of the instrument was tested. The Cronbach alpha reliability coefficient for items related to ROI oscillates between 0.792 and 0.826, with 0.824 as the overall score for the construct. For the risks and risk remedies constructs, the Cronbach alpha values for the two constructs are above 0.765, more than the minimum value (0.60) prescribed by Field (2009). The reliability scores obtained from the three constructs confirmed that the items are fit to be used to examine the respondents' knowledge concerning ROI, risk, and risk remedies of HCD.

Analysis

In order to examine the presence of variation and significant difference in the respondents' level of knowledge concerning HCD ROI, risks, and remedies across occupational categories among sampled respondents, a one-way analysis of variance (ANOVA) was conducted. Using the demographic information of the respondents (job title), the analysis was conducted using the Statistical Package for Social Science (SPSS) version 27. The dataset was divided according to job title and correlated with the ratings of the Likert scale respondent responses (Eva & Oskar, 2013). All the assumptions of ANOVA (that is, variables in the study; independent variable was nominal in at least two levels while the dependent variable was interval/continuous; normality; homogeneity of variance; outliers; .) were established before the analysis. Q-Q plot was used to test if the data was normally distributed and whether the dataset equally satisfied the conditions stipulated for the homogeneity of variance.

Table 1 presents the normality results using the Kolmogorov-Smirnova and Shapiro-Wilk tests for the constructs of ROI, risk, and remedies as per the respondent occupational category. The dataset fulfilled the normality assumption (p>0.05). The p-values for both tests were greater than 0.05; thus, the data was normally distributed since it does not significantly deviate from the normal distribution. The p-value from the Levine test was also not significant (p>0.05), indicating that the data fulfilled the homogeneity of variance assumption.

Table 1

Tests of Normality

	Occupational Categories	Kolmogorov-Smirnova			Shapiro-Wilk		
		Statistics	*df*	Sig	Statistics	*df*	Sig
ROI	Admin. Professionals	0.136	89	0.186	0.948	89	0.066
	HR Professionals	0.113	37	0.200*	0.96	37	0.199
	Education Service	0.151	13	0.200*	0.924	13	0.288
	Consultants	0.225	12	0.096	0.91	12	0.212
	Entrepreneurs	0.257	5	0.200*	0.833	5	0.146
	Financial Services	0.19	14	0.185	0.944	14	0.467
	Hospitality Professionals	0.144	13	0.200*	0.932	13	0.367
	L&D Professionals	0.17	18	0.182	0.958	18	0.559
	General Manager	0.314	9	0.081	0.847	9	0.068

	Occupational Categories	Kolmogorov-Smirnova			Shapiro-Wilk		
		Statistics	*df*	Sig	Statistics	*df*	Sig
Risk Identification	Admin. Professionals	0.13	89	0.161	0.927	89	0.069
	HR Professionals	0.121	37	0.191	0.969	37	0.376
	Education Service	0.18	13	0.200*	0.915	13	0.217
	Consultants	0.197	12	0.200*	0.944	12	0.555
	Entrepreneurs	0.32	5	0.104	0.802	5	0.084
	Financial Services	0.234	14	0.068	0.868	14	0.079
	Hospitality Professionals	0.155	13	0.200*	0.908	13	0.175
	L&D Professionals	0.183	18	0.116	0.949	18	0.402
	General Manager	0.247	9	0.127	0.942	9	0.601
Risk Remedies	Admin. Professionals	0.117	89	0.074	0.932	89	0.110
	Remedies HR Professionals	0.18	37	0.094	0.946	37	0.069
	Education Service	0.212	13	0.115	0.891	13	0.144
	Consultants	0.258	12	0.086	0.916	12	0.257
	Entrepreneurs	0.225	5	0.200*	0.933	5	0.617
	Financial Services	0.197	14	0.148	0.922	14	0.238
	Hospitality Professionals	0.22	13	0.087	0.875	13	0.068
	L&D Professionals	0.185	18	0.103	0.914	18	0.101
	General Manager	0.176	9	0.200*	0.904	9	0.278

Note. * This is a lower bound of the true significance.
a Lilliefors Significance Correction

Ethical Considerations

Research ethics for social science researchers were adhered to in the current study. The respondents consented to participate prior to taking the survey. The respondents' anonymity and confidentiality was protected with unique identification numbers. The research quality was assured in the data gathering, analysis, and reporting phases. The principles of fairness, validity, and reliability underpinned this study. No respondents and organizations were prejudiced or discriminated against by this study. The original survey questionnaires, dataset, analysis, and results along with passwords were protected and stored safely.

Results

The hypotheses of this study were as follows: There was no statistical difference in occupations on i) the knowledge of measuring HCD ROI; ii) the knowledge of identifying the HCD risk, and iii) the knowledge of HCD risk remedies. To test these hypotheses, one-way ANOVA test was conducted using respondent occupations and their HCD knowledge. Descriptive statistics and the results of the ANOVA tests were presented for each of the constructs, revealing the mean scores, standard deviation, and level of significance for each construct at the 95% interval level.

Knowledge on HCD ROI

Table 2 presents the descriptive statistics for HCD ROI. The table reveals that general managers (M = 39.5, SD = 4.927), followed by the entrepreneurs (M = 37.6, SD = 6.1887), have a better knowledge of measuring ROI as compared with other occupational categories. The respondents in the learning and development (L&D) category have the least knowledge according to the mean scores (M = 34.5, SD = 4.574).

Table 2

HCD ROI Descriptive Statistics

Occupational Category	*N*	*M*	*SD*	*SE*	*LL*	*UL*	Min	Max
Admin. Professionals	89	35.8997	5.24106	0.55555	34.7956	37.0037	26	50
HR Professionals	37	34.8944	4.96495	0.81623	33.239	36.5497	27	45.1
Education Service	13	36.4576	5.50134	1.5258	33.1331	39.782	24	43
Consultants	12	36.4106	4.12449	1.19064	33.79	39.0312	29.56	42
Entrepreneurs	5	37.6	6.1887	2.76767	29.9157	45.2843	31	44
Financial Services	14	37.0589	4.14141	1.10684	34.6677	39.4501	30	43
Hospitality Professionals	13	36.6134	5.51711	1.53017	33.2795	39.9474	30	49
L&D Professionals	18	34.5488	5.57463	1.31395	31.7766	37.321	25	45
General Manager	9	39.5556	4.92725	1.64242	35.7681	43.343	31	45
Total	210	35.9891	5.15541	0.35576	35.2878	36.6905	24	50

Respondents in the financial service category reported better ROI measurement knowledge (M = 37.05, SD = 4.141) than hospitality professionals (M = 36.6, SD = 5.517) or L&D professionals. The mean scores among the occupational categories oscillate between 39.5 (highest) and 34.5 (lowest). This indicates variations in the level of knowledge across occupational categories concerning the measurement of HCD ROI among South African employees. Table 3 presents the ANOVA results showing no statistically significant difference (p =0.355; p >0.05) in the level of knowledge of measuring ROI between the occupational groups.

Table 3
Statistics for One-Way ANOVA Measuring *ROI on HCD Knowledge*

	Sum of Squares	*df*	Mean Square	*F*	Sig
Between Groups	235.922	8	29.49	1.114	0.355
Within Groups	5318.932	201	26.462		
Total	5554.854	209			

These findings imply that although there are differences in ROI knowledge across all occupational categories of this study, there is little variation in the level of ROI knowledge. This means that a similar level of knowledge concerning what to measure and how to measure the ROI of HCD exists among South African occupational groups.

Knowledge on HCD Risks

Table 4 displays the mean scores and standard deviation of respondents' level of knowledge concerning HCD risk identification across the occupational groups. The descriptive analysis reveals that entrepreneurs are better at identifying HCD risks with the highest mean score of 42.40 and a standard deviation of 4.927. Respondents in the general manager (M = 38.86, SD = 5.610), consultants (M = 38.51, SD = 3.874), and HR professional (M = 38.45, SD = 5.487) occupational categories were noticed to have a relatively similar mean score as compared to others. To answer the question on HCD risk identification knowledge, results indicated that entrepreneurs and business owners have higher levels of knowledge in identifying HCD risks. The results showed that general managers, consultants, and HR professionals have similar knowledge on HCD risk identification.

Table 4
Descriptive Statistics

Identifying HCD Risk Knowledge					95% Confidence Interval for Mean			
Occupational Categories	*N*	*M*	*SD*	*SE*	Lower Bound	Upper Bound	Min	Max
Admin/General Service Professionals	89	35.8532	5.48719	0.58164	34.6973	37.0091	27	48
HR Professionals	37	38.4585	4.28321	0.70415	37.0304	39.8866	27	47
Education Service	13	37.3846	4.51919	1.2534	34.6537	40.1155	29	43
Consultants	12	38.5123	3.87488	1.11858	36.0503	40.9743	30	45
Entrepreneurs	5	42.4	7.89303	3.52987	32.5995	52.2005	30	48
Financial Services	14	35.7432	5.51584	1.47417	32.5584	38.9279	30	47
Hospitality Professionals	13	35.2362	4.36837	1.21157	32.5965	37.876	30	42
L&D Professionals	18	35.7778	3.154	0.7434	34.2093	37.3462	31	43
General Managers	9	38.8619	5.61023	1.87008	34.5495	43.1743	30	48
Total	210	36.7918	5.12867	0.35391	36.0941	37.4895	27	48

According to Table 4, respondents in the hospitality sector had the lowest mean score (M = 35.23, SD = 4.368), suggesting that professionals in the hospitality business have little knowledge of identifying HCD risk as compared with other categories. The mean scores of all the occupational categories oscillate between 42.40 (highest) and 35.23 (lowest). This indicates variations across occupational categories concerning HCD risk identification knowledge in South African organizations; however, further analysis was required to establish the level of significance.

Table 5 presents the results of the one-way ANOVA on HCD risks knowledge. The results reveal no statistically significant difference (p = 0.116; $p > 0.05$) between the occupational groups for this construct. This implies that the variation observed in the mean scores concerning the level of knowledge on HCD risk across all occupational categories was insignificant.

Table 5
Statistics for One-Way ANOVA Identifying HCD Risk Knowledge

	Sum of Squares	*df*	Mean Square	*F*	Sig
Between Groups	482.462	8	60.308	2.417	0.116
Within Groups	5014.926	201	24.95		
Total	5497.388	209			

Knowledge of HCD Risk Remedies

Table 6 presents the descriptive statistics of the mean and standard deviation scores for respondent knowledge related to HCD risk remedies. The results reveal that general managers have better knowledge in managing HCD risks (M = 32.6, SD = 3.774) as compared with other occupational categories with marginal mean scores. The HR professionals closely followed the general managers with M = 32.52 SD = 3.414, indicating that they are aware of HCD risks. Similarly, the L&D professionals also manage HCD risks better than other occupations, with M = 32.07, SD = 2.821.

Table 6
Descriptive Statistics for HCD Risk Remedies

HCD Risk Remedies Knowledge					95% Confidence Interval for Mean			
Occupational Category	*N*	*M*	*SD*	*SE*	*LL*	*UL*	Min	Max
Admin Professionals	89	31.3113	4.9494	0.52463	30.2687	32.3539	23.84	40
HR Professionals	37	32.5281	3.41455	0.56135	31.3897	33.6666	25	40
Education Service	13	30.9231	5.5896	1.55028	27.5453	34.3008	17	40
Consultants	12	30.923	3.80346	1.09796	28.5064	33.3396	24	37
Entrepreneurs	5	31	6.2849	2.81069	23.1963	38.8037	23	38
Financial Services	14	30.5529	4.96316	1.32646	27.6872	33.4185	24	40
Hospitality Professionals	13	29.017	4.26058	1.18167	26.4424	31.5917	23.94	35
L&D Professionals	18	32.0718	2.8214	0.66501	30.6687	33.4748	25	36.29
General Managers	9	32.6667	3.77492	1.25831	29.765	35.5683	28	38
Total	210	31.4027	4.49112	0.30992	30.7918	32.0137	17	40

According to the results of Table 6, respondents in the hospitality category again showed the lowest mean score (M = 29.0, SD = 4.20), indicating a lack of awareness of how to remedy HCD risks. The mean scores among the occupational categories oscillate between 32.6 (highest) and 29.0 (lowest). This indicates variations in the level of knowledge across the occupational categories concerning HCD risk remedies. Further tests were conducted to determine the significance level of the variance in occupational groups for HCD remedies.

Table 7 presents the one-way ANOVA results for HCD remedies. Results reveal no statistically significant difference ($p > 0.05$) in the level of knowledge of HCD risk remedies among the occupational categories.

Table 7

Statistics for HCD Remedies One-Way ANOVA

	Sum of Squares	*df*	Mean Square	*F*	Sig
Between Groups	160.705	8	20.088	0.996	0.44
Within Groups	4054.859	201	20.173		
Total	4215.564	209			

The results of Table 7 imply that across all occupational categories established in this study, there exists a similar level of knowledge among respondents concerning HCD risk remedies. With the significance value (p =0.444; $p > 0.05$), it is sufficient to conclude that there is no statistically significant difference in the knowledge of HCD risk remedies across occupational categories amongst South African employees.

Discussion

This section discusses the outcomes of the results emanating from data gathered in this research. This study was descriptive and exploratory. The data analysis examined the level of knowledge on HCD ROI, risk, and remedies of employees in various occupational categories. It established whether there were significant differences in respondents' level of knowledge.

Questions on HCD ROI, risk, and risk remedies were raised and continued to be of concern to researchers globally (Yaqoot et al., 2017). Furthermore, Ameyew et al. (2019), Govender (2018), Breedt-Maree (2017), Chukwu (2016), and Shuaibu and Oladayo (2016) raised concerns

on the HCD ROI, risk and remedies motivation and knowledge of managers, employees, and business owners, particularly the lack of knowledge among HCD stakeholders on measures of ROI and risk in emerging and developing economies.

The results for data analysis as presented in Tables 2 to 7 through the mean scores, standard deviation, and analysis of variance results indicated that managers, employees, and business owners across occupational categories in South African organizations have a relative knowledge on how to measure the HCD ROI, how to identify HCD risk, and how to mitigate HCD risks with solutions and remedies. The results indicated variations in the level of knowledge across the occupational categories as indicated by the varying mean scores. However, it was noted that the mean scores were not substantially dispersed.

Further analysis conducted on the data revealed that the p-values of the three hypotheses were greater than 0.05, suggesting that there were no statistically significant differences between respondents' knowledge concerning measures of ROI, risk, and risk remedies. Based on this result, the study failed to reject the hypotheses. Examining the employers, managers, and employee knowledge concerning their knowledge about ROI on HCD, risk, and HCD risk remedies was an attempt to fill the HCD measurement knowledge gap as observed by Mara (2020), Govender (2018), Aluko and Shonubi (2014), and others.

This study is valuable to HCD policymakers, business owners, line managers, HR, L&D, other professionals, and employees globally. Emerging and developing economies in Africa can significantly benefit from this study as the knowledge on how to measure ROI, risk, and risk remedies are limited in the continent. The implications of the results indicated a step towards enhancement of the efficacy and effectiveness of HCD. As Shuaibu and Oladayo (2016) and Soubjaki (2017) suggested that within the context of emerging economies, low knowledge on how to quantify the value of ROI is a key factor constraining effective measurement of the contribution of HCD to the profitability of the business.

Conclusion

The current study aimed to investigate the knowledge of the measurement of HCD ROI, risks, and risk remedies across occupational

categories in South African organizations. Furthermore, the study sought to establish whether the level of HCD knowledge statistically differs across various occupational groups. The results indicated that HCD knowledge of measuring ROI, identifying risks, and mitigating risk with remedies is similar across occupational categories.

General managers and entrepreneurs were observed to have better knowledge of ROI measurement, identifying risk, and proposing risk remedies as compared with other occupational groups. L&D and hospitality professionals were ranked the least in terms of HCD measurement knowledge. Although, the mean score did not show a wide dispersion across occupations, however, further analysis indicated that the variations in knowledge level observed through the mean scores were statistically insignificant. The study concluded that managers and employees should make efforts to improve their knowledge of measuring HCD ROI, identifying HCD risks, and mitigating HCD risks with effective and efficient remedies. HCD measurement and evaluation knowledge is essential for growing individual, team, and business performance in the 21st century, 4IR globalized marketplace.

Limitations and Further Research

The generalization of the results may be limited since the study was conducted in one country in Africa. The instrument only measured tangible constructs of HCD ROI, risk, and risk remedies hence, may be limited in covering the HCD knowledge scope. Future studies must expand this survey instrument to explore the intangible benefits of measuring HCD ROI, risks, and remedies. A more comprehensive survey instrument may yield better results on HCD knowledge and its contribution to business performance and talent management in businesses. Further research is recommended to extend the study across other countries on the African continent and countries across the globe as it would allow for more robust and statistically reliant HCD ROI and risk findings for comparisons across countries and economies.

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