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Emergency Nurses' Job Demands-Resources Profiles and Capabilities: Effects on Performance and Intention to Leave

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Abstract: This study investigated emergency nurses' job demands-resources profiles and the associations thereof with their work capabilities, job performance, and intention to leave. A cross-sectional survey was used to gather data from emergency nurses working in South Africa (n = 204). The Job Demands-Resources Scale, Capability Set for Work Questionnaire, World Health Organization Health and Work Performance Questionnaire, and Turnover Intention Scale were administered. Latent profile analysis resulted in four job demands-resources profiles: a demanding job, resourceful job, rich job, and poor job. Job demands-resources profiles, specifically having a rich job and not having a poor job (compared to a demanding job), significantly impacted emergency nurses' capability set and specific work capabilities. In addition, having a resourceful job and two work capabilities, namely, using knowledge and skills and contributing to something valuable, affected emergency nurses' job performance. Furthermore, poor and demanding jobs (compared to rich and resourceful jobs) predicted emergency nurses' intentions to leave. A rich job (compared to a demanding job) was significantly associated with six of the seven work capabilities, while a resourceful job was associated with earning a good income and contributing to something valuable. Autonomy at work, career progress, and relationships with supervisors were associated with most emergency nurse work capabilities.

Keywords: emergency nurse; job demands; job resources; capabilities; performance; intention to leave; South Africa

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1. Introduction

Emergency nurses (any nurse [professional or lower categories] working in the emergency department of a hospital providing Level 1 or Level 2 trauma care) provide critical care and are vital to the success of emergency care, especially during a global pandemic [1]. They must be able to promptly perform patient assessment and treatment across all ages and various illnesses and injuries, while professionally and efficiently navigating a diverse job function and providing care [2]. It is therefore vital to protect and retain healthcare workers [3]. Unfortunately, the working environment in which emergency nurses operate is known for being demanding [6], potentially affecting their ability to perform effective emergency care and their willingness to remain in institutions to provide care [5]. In addition, these nurses are exposed to workplace violence [6], overcrowding [7], death [8], and other traumatizing events, making emergency nurses' work emotionally demanding [9]. Moreover, research shows that improving emergency nurses' job resources is essential to promoting their work functioning [10].

Significant events such as the novel SARS-CoV-2 outbreak, resulting in a global pandemic (COVID-19), placed further pressures on an already demanding working environment, especially for emergency nurses working on the front lines where healthcare resources were already constrained, such as in low-to-medium income countries [11-13].

Some of the most prominent job demands during the pandemic identified in low-to-medium income countries were an increased workload characterized by overtime, frequent night shifts, and working under strict time pressures [13]. Emergency nurses were also required to deal with increased exposure to death and dying, as well as navigating inadequate emotional preparation, fear, uncertainty regarding treatment, stringent biosecurity measures, stigma, and risk of being infected [13]. Furthermore, the belief that the virus was created intentionally, and the number of office days (albeit different for younger and older workers) contributed to the demands placed on them [3, 12]. To make matters worse, the pandemic made it almost impossible for emergency nurses to rely on important resources (such as being able to exchange experiences and feelings with co-workers and to receive sufficient support from their supervisors) to safeguard them from the increased demand [13]. Consequently, emergency nurses in low-to-medium income countries (such as Bolivia, Egypt, Ecuador, and Iran) had been exhibiting an increase in psychological distress and anxiety disorders [12]. The vicious cycle of high demands leading to decreased satisfaction causing increased stress has a strong association with intention to leave the job or profession [13]. Therefore, the global pandemic has lowered the mental health, life satisfaction, and job satisfaction of emergency nurses, vital to sustain employment and performance [3, 12].

Various theories and models have been developed to explain the functioning of individuals in demanding work contexts. Firstly, the conservation of resources (COR) theory [14, 15] holds that people are driven to obtain valued resources and protect the ones they already have. Secondly, according to the social exchange theory (SET) [16], human relations are formed according to subjective cost-benefit analyses. The more often a particular behavior has been rewarded, the more likely it is that it will be repeated in the future [17]. A meta-analysis of organizational justice research indicated that SET variables such as trust, perceived organizational support, and leader-member exchange were critical to the relationship between justice, job, and contextual performance [18]. Thirdly, the job demands-resources (JD-R) model [19-21], which focuses on work characteristics and experiences concerning individual and organizational outcomes, has been developed and linked to these theoretical frameworks [22]. In the fourth place, in contrast to these frameworks, Sen's [23] capability approach (CA) has been used to conceptualize the flourishing of individuals at work due to their capabilities and functioning [24].

As a social justice framework, the CA suggests that people must be free to choose the lives they have reason to value from a wide range of resources or opportunities. Therefore, the CA entails an opportunity-based rather than a means-based framework to study the functioning of people. Capabilities are the achieved doings and beings that a person considers valuable. Realized capabilities (i.e., the capability set) represent the functionings of people. However, people need resources to navigate their demands, while achieving valued work effectively [25]. Van der Klink et al. [24] developed the sustainable employability (SE) model, which considers the capabilities and functioning of individuals together with resources and constraints. This latter model investigates work capabilities (i.e., valued beings and doings at work, the opportunity at work to achieve these work values, and their achievement) and functioning.

Functionings refer to individuals' states and actions (e.g., performance and intention to leave) that affect the sustainable employability of emergency nurses and the institutions that employ them. Emergency nurses' sustainable employability, in terms of performance and retention, is threatened if they cannot effectively navigate their work-related demands, as they risk unsatisfactory performance or consider leaving their job or profession [26]. However, based on the CA, van der Klink et al. [24] argue that capabilities affect the work functioning of employees. Work values become capabilities when individuals consider them important, are enabled to achieve them, and achieve them. Even more critical for the functioning of employees is their capability set, which includes a range of capabilities [27, 28]. Furthermore, emergency nurses' job demands and resources may affect their work capabilities.

Only a few studies (e.g., Abma et al. [27]; De Wet & Rothmann [28]; Murangi et al. [29]) have applied an opportunity-focused perspective (in contrast to a means-focused perspective) to investigate the functioning of individuals in the work context. Moreover, no studies were found regarding emergency nurses' job demands, resources, capabilities, and functionings. Furthermore, while research is available on the effectiveness of the JD-R model in assessing and predicting employee well-being, scientific evidence is needed concerning the associations among emergency nurses' JD-R profiles and their work capabilities and their effects on their performance and intention to leave.

This study investigated emergency nurses' functionings at work (i.e., job performance and intention to leave) by evaluating their perceived JDR profiles and work capabilities. Rather than looking at what people have access to, the CA examines what they can do and be with those resources [25]. Therefore, this study makes two important contributions. First, it contributes to knowledge regarding the associations between job demands and resources of emergency nurses and their work capabilities. Second, it provides a unique contribution regarding the associations between emergency nurses' JD-R profiles and work capabilities and the effects thereof on their functioning at work.

2. The Capability Approach

Amartya Sen's capability approach (CA) offers a framework to assess people's well-being through capabilities and functionings, which form the core elements of the approach [23]. Sen argues that it is essential for people to have the freedom to choose and live a life they have reason to value. Within the CA framework, capabilities include people's realized beings (states) and doings (actions) that they value, while functionings represent the corresponding accomplishments [30, 31]. The CA also asserts that conversion factors are essential in transforming capabilities into functionings. Conversion factors can be personal (such as education), social (such as traditions), or environmental (such as geographical location) [25, 32].

The CA fits well with the needs of the modern-day worker [24]. It can be applied in the work context to identify people's work values and whether they are able and enabled to achieve them [24]. People increasingly seek work that they value and where they matter [33, 34]. The sustainable employability model [24], based on the capability approach, provides a framework for assessing individuals' capabilities (such as contributing to something valuable) and functionings (mental health) at work. Within the sustainable employability framework, it is important to identify what work goals or outcomes people consider valuable, whether their work environment enables them to achieve these work values, and whether they are achieving them [33]. Studies show that capabilities are associated with work functioning in the Netherlands [27], Namibia [29], and South Africa [28].

The CA is not a social justice theory, but has been used in thinking about justice [25], i.e., "how the good and bad things in life should be distributed among the members of a human society" [35]. Robeyns [25] states that social justice and distributive justice are often synonyms. However, she points out that distributive justice concerns an analysis of who gets what, while social justice refers to the respect, recognition, or attitudes expressed by an individual or institution and does not only concern distribution. In the pursuit of social justice, there is a shift from distributive (i.e., fairness in the distribution of income and wealth) to contributive justice, which implies that human flourishing is fostered through advancing the flourishing of others [36].

2.1. Capabilities

Within the capability approach [23] framework, well-being is conceptualized as achieving valued beings and doings (through capabilities) instead of economic ideals. According to Duong and Van Pham [37], the capability approach should incorporate work capability to measure human development adequately. Consequently, people require resources and freedoms to create opportunities they have reason to value to live a flourishing life [38]. In this sense, well-being is achieved through capabilities (enabled and achieved valued states and actions) and functionings (corresponding accomplishments such as happiness or good health) [25]. Expanding capabilities enable individuals to take an active role in shaping their well-being and contributing to the lives of others [37].

For the modern-day worker, work needs to hold meaning beyond economic utilities [24]. Thus, it is more beneficial to consider what emergency nurses value at work and how they can be retained, as opposed to what makes them leave [39, 40]. The sustainable employability model [24], which uses the capability approach to operationalize employees' capabilities and functionings for work, can be utilized to understand how emergency nurses can be more sustainably employed. In this sense, emergency nurses' sustainable employability depends on enabling and achieving work values [33]. Therefore, for emergency nurses to be sustainably employed, their personal, social, and environmental conditions need to offer them the opportunities to contribute to the world they have reason to value without jeopardizing their health or well-being [27]. Consequently, emergency nurses require numerous opportunities to realize valued functionings [41] and a set of capabilities to function optimally at work.

Identifying individuals' capabilities (opportunities, enablement, and achievement of work values) is important for creating a capability set. A capability set refers to the potential set of beings and doings individuals' can achieve, given their resources and conversion factors [42]. A capability set is, thus, the aggregation of available options reflecting several beings and doings emergency nurses have reason to value. Abma et al. [27] identify seven work capabilities: using knowledge and skills, developing knowledge and skills, being involved in important decisions, building and maintaining meaningful contacts at work, setting own goals, earning a good income, and contributing to something valuable.

2.2. Job demands and resources

2.2.1. Conceptualization of job demands and resources

Individuals need the relevant resources to navigate the numerous demands associated with their profession. Within the COR framework, resources are anything individuals value and consider helpful in achieving their goals [15, 43]. These resources can potentially include objects (e.g., equipment), conditions (e.g., permanent employment), support (e.g., from co-workers and supervisors), inner resources (e.g., self-esteem), and autonomy [43]. The COR theory argues that losing resources affects people more than gaining resources. Therefore, people are motivated to acquire resources to counter resource loss [44]. Additionally, SET has been a leading framework for examining and understanding reactions to social justice.

The job demands-resources (JD-R) model [21] investigates employees' work characteristics and experiences through job demands and job resources and argues that a lack of personal resources and an imbalance between job demands and job resources negatively affect employee well-being [45, 46]. Employees' physical, psychological, and organizational strenuous work dimensions would be categorized as job demands. In contrast, job resources refer to the work dimensions that reduce job demands, assist in achieving work goals, and foster personal growth, development, and learning [47]. Emergency nurses' job demands and resources affect their work performance [48] and reduce their intentions to leave [49]. A recent meta-analytic review [22] suggests that the JD-R is an excellent theoretical framework for assessing employees' well-being in different organizations.

The same demand may be considered a challenge for some emergency nurses, but a hindrance for others [50]. Nevertheless, it remains an aspect of the job that drains an employee's energy [46]. Therefore, challenge demands can have adverse work outcomes for emergency nurses, but it is likely to be to a lesser degree than when perceived as a hindrance [51]. Furthermore, the emergency nursing profession is recognized as an emotionally demanding occupation with frequent patient interactions, creating the expectation that emergency nurses need to be able to manage their emotions [52]. Emotional demands are any aspects of the job that require emotional effort, such as handling angry patients and being confronted with emotionally disturbing situations [53]. Mismanaged emotional demands have potentially harmful implications, such as increased anxiety and depression symptoms [54]. In addition, emergency nurses' exposure to numerous job demands simultaneously can make them more inclined to adverse outcomes [10]. Therefore, the study investigated emergency nurses' challenges, hindrances, and emotional demands.

Job resources can act as a protective measure and safeguard emergency nurses against their job demands [19]. While some job demands cannot be reduced, resources can be enhanced to improve work outcomes. Several studies have found relationships with co-workers and supervisors and autonomy at work to be essential resources within the emergency department [see 10]. Furthermore, increasing role clarity, a concern among emergency nursing professionals [55], can have an impact on their functioning [56], lower anxiety and depressive symptoms, and increase self-confidence, effort, and satisfaction [56]. The availability of resources to promote career progress [57] and the ability to appropriate readily available equipment [58, 59] are also essential resources among these professionals. Consequently, the study evaluated emergency nurses' relationships with coworkers and supervisors, role clarity, career progress, autonomy at work, and the availability of equipment.

2.2.2. The role of resources in the capability approach

Resources are crucial in the CA, but in an instrumental way [25]. Focusing on capabilities and functioning does not mean that capability analysis ignores resources. Capabilities depend on resources, therefore, resources must be appraised in terms of their effectiveness in enhancing the lives and liberties of people (i.e., how they extend substantive human freedom) rather than taking them to be valuable by themselves [25]. Once it has been decided which capabilities are relevant, it is necessary to investigate the determinants of those capabilities (i.e., resources, conversion factors, and constraints).

The resources available to emergency nurses hold value depending on what they can achieve and when they can use or convert them [60]. Consequently, while emergency nurses must have the relevant resources to manage their job demands, more is needed to achieve optimal functioning: they need to convert the available job resources into opportunities required to achieve valued work outcomes [33] through conversion factors [25]. In this sense, some emergency nurses with the same job resources may realize their potential, while others do not. Therefore, conversion factors can explain aspects affecting emergency nurses' work capabilities and functionings. Furthermore, job demands can hold positive outcomes for emergency nurses if they can convert them into valuable aspects that are aligned with their work values [233. Thus, the study investigated the associations between emergency nurses' JD-R profiles and their work capabilities and functionings.

2.2.3. Job demands-resources profiles: A person-centered approach

The effect of job demands and resources on employees' capabilities and functioning can be studied using variable- and person-centered approaches. In variable-centered studies, the focus is on average relationships between variables in a specific sample [61]. Such studies do not consider that relations among variables can differ among different subpopulations (e.g., different JD-R profiles) in a sample. Furthermore, tests of interaction effects

in variable-centered approaches do not solve the problem of subpopulations in a sample, since such tests assume that the interaction effects apply equally to all participants [61].

Person-centered approaches (such as latent profile analyses) assume that subgroups of samples (profiles) come from a heterogeneous population [61, 62]. The person-centered approach can identify complex relationships among variables that will ordinarily not be detected using a variable-centered approach. Caesens et al. [61] suggest that person-centered analyses can "explore the underpinnings of unexpected or inconsistent variable-centered associations". However, few studies have focused on the combined effects of different job demands and resources on employees' capabilities and functioning. Consequently, little is known about the patterns that characterize the combination of different job demands and resources and their effects on individuals' functioning.

While various studies have been conducted on the job demands and resources of nurses in a South African context [e.g., 63-65], these studies used variable-centered approaches. Thus, a person-centered approach to job demands and resources can provide important information regarding individual differences among emergency nurses and their capabilities and functioning. Previous research on JD-R profiles found four distinctive profiles: resourceful job, demanding job, rich job, and poor job [29, 66]. A resourceful job has low demands with high resources, while a demanding job has high demands and low resources. A rich job presents with both high demands and resources, whereas a poor job has low demands and resources. Poor jobs are negatively associated with using knowledge and skills as a capability, while resourceful and rich jobs are associated with developing knowledge and skills, being involved in important decisions, building and maintaining meaningful relationships at work, and setting goals [29].

By employing a person-oriented approach, co-occurrences between job demands and resources among emergency nurses can assist in better understanding the interrelationships [67]. Furthermore, the combination of job demands and resources allows for investigating corresponding emergency nurse capabilities and functionings across the identified profiles. A person-oriented approach may also provide insight into whether it is beneficial to decrease job demands or increase job resources to improve emergency nurses' work performance and decrease their intention to leave. However, while researchers have studied emergency nurses from a person-oriented perspective [68-70], scientific information regarding JD-R profiles among emergency nurses in a South African context and associations with their work capabilities and functionings is lacking. Therefore, the study investigated emergency nurses' JD-R profiles and associations with their work capabilities, job performance, and intentions to leave.

2.3. Job performance and intention to leave as functionings

Emergency nurses' states and actions (i.e., functioning) at work have implications for them and the hospitals that employ them [25]. Their performance and intention to leave are considered two crucial work functionings.

Emergency nurses' work performance is an essential phenomenon in occupational health [71], especially considering the SARS-CoV-2 outbreak resulting in a global pandemic (COVID-19) [72], placing increased pressure on their work performance [73]. Work performance comprises employee behaviors or actions aligned with the goals of the organization and employees' job responsibilities. Emergency nurses' work performance comprises job skills, clinical competencies and task performance, and contextual performance (duties outside the job description) [72]. The work capability set is positively associated with work performance [27], indicating that emergency nurses with a more comprehensive set of capabilities will most likely perform better at work.

The retention of emergency nurses is a global concern. The demanding working conditions in which the nursing profession operates is both due to, and a result of, low retention rates [74]. Aggression and violence in the workplace, critical incidents (events provoking strong emotional reactions), and the work environment (e.g., inadequate staffing

levels, high workloads, and overcrowding) are some of the leading contributors to low retention among these professionals [75]. Furthermore, stress caused by patients and their families, high workloads, and conflict with supervisors and co-workers increases nurses' intention to leave [76]. Intention to leave refers to employees' resolute and conscious inclination to leave their employment [77]. Emergency nurses who intend to leave their job or profession produce negative outcomes such as increased counterproductive work behaviors and decreased organizational citizenship behavior [78]. Aspects that can potentially increase the retention of emergency nurses include the perception of good teamwork, supervisors prioritizing safety and displaying adequate relational competencies [79], a conducive work environment [80], ethical leadership, and decision authority [75].

Emergency nurses who are successful in realizing their work values are expected to exhibit higher work performance and are less likely to leave their job or the profession. Furthermore, emergency nurses' perceptions of their level of challenge, emotional, and hindrance demands can positively or negatively affect their functionings. If the job demands are aligned with their work values, they will probably report higher work performance and lower intention to leave [33]. Therefore, the study aimed to investigate emergency nurses' work performance and intention to leave as functionings towards their sustainable employability.

3. Current Study

Employing a person-centered approach to investigate JD-R profiles among emergency nurses in order to identify naturally forming subgroups can explain the various patterns between job demands and job resources among emergency nurses [81]. Furthermore, a person-oriented approach is expected to result in a better understanding of the combination of emergency nurses' job demands and resources and how these affect their work capabilities and functionings (i.e., work performance and intention to leave).

Abma et al. [27] investigated the associations between the work capability set and functionings, specifically work role functioning-flexibility demands, work ability, work performance, worked hours, sickness absence, and sickness absence days among Dutch employees. However, further research is required regarding the associations between emergency nurses' work capabilities and functionings in a South African context. Therefore, this study aimed to evaluate emergency nurses' JD-R profiles in South Africa and investigate the associations among these distinct profiles with their work capabilities and functionings, specifically work engagement and intention to leave (as shown in Figure 1).

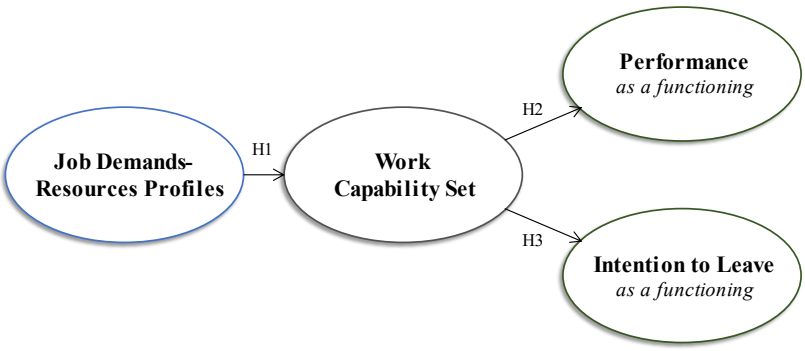


Figure 1. Model of JD-R Profiles, Capabilities, and Functionings

The following hypotheses were set (see Figure 1):

- Hypothesis 1 (H1): Emergency nurses' JD-R profiles are associated with their work capabilities.
- Hypothesis 2 (H2): Emergency nurses' work capability set is positively associated with their performance.
- Hypothesis 3 (H3): Emergency nurses' work capabilities are negatively associated with their intention to leave.
- Hypothesis 4: Emergency nurses' job demands-resources profiles are indirectly associated with their work performance (H4a) and intention to leave (H4b) via their work capabilities.

4. Materials and Methods

4.1. Research Design

A quantitative research approach was followed with a cross-sectional survey design. The selected research design allowed for the investigation of relationships among variables [82] and for identifying latent profiles (or subpopulations) within a population using a set of variables [83]. Latent profile analysis (LPA) groups people with similar characteristics into profiles with varying degrees of probabilities [83].

4.2. Participants

The South African healthcare sector comprises two sectors, i.e., the public and private healthcare sectors. The public healthcare sector serves around 71% of the South African population and is funded by the national government. Running parallel to the public sector is the private healthcare sector, which is predominantly funded by individuals via medical aid schemes and health insurance [84]. Statistical power analysis using G*Power software [85] showed that with a medium effect size ($f^2 = .15$), an alpha value of .05, power of .95 and four predictors in a regression model, 129 participants are needed.

The study followed a purposive sampling approach to recruit potential participants. Persons employed as a nurse in the emergency department of hospitals offering Level 1 or Level 2 trauma care were approached and asked to participate in the study. A Level 1 trauma care hospital can provide leadership and total care for every aspect of injury (prevention to rehabilitation), while providing 24-hour availability of all primary specialties and a trauma surgeon as director. A Level 2 trauma care hospital provides 24-hour medical cover for initial definitive trauma care, regardless of injury severity (including the typical specialties) [86]. The study obtained permission from 13 hospitals operating in the private healthcare sector and one hospital from the public sector in the Gauteng province. A total of 204 responses were obtained.

From Table 1, it is evident that mainly females (71.57%) participated in the study. A total of 28.43% were aged between 30 and 39. The nurses predominantly held a higher certificate (25.98%), three-year diploma (24.02%), or bachelor's degree (20.59%) qualification. A total of 25% had been qualified between six and 10 years and mostly permanently employed (75.00%).

Table 1. Characteristics of Participants (*N* = 204)

Demographic variable	Grouping	*n*	%
Gender	Male	54	26.47
	Female	146	71.57
	Missing values	4	1.96
Age	18 – 29 years of age	27	13.24
	30 – 39 years of age	58	28.43
	40 – 49 years of age	30	14.71
	50 – 59 years of age	18	8.82
	60+ years of age	2	0.98
	Missing values	69	33.82
Highest qualification	Grade 12 (NQF 4)	19	9.31
	Higher certificate (NQF 5)	53	25.98
	Three-year diploma (NQF 6)	49	24.02
	Bachelor's degree (NQF 7)	42	20.59
	Honours degree (NQF 8)	28	13.73
	Master's degree (NQF 9)	1	0.49
	Other	5	2.45
	Missing values	7	3.43
Years qualified	Less than 1 year	2	0.98
	1 – 5 years	31	15.20
	6 – 10 years	51	25.00
	11 – 20 years	38	18.63
	21 – 30 years	8	3.92
	31+ years	11	5.39
	Missing values	63	30.88
Contract type	Permanent contract	153	75.00
	Fixed-term contract	17	8.33
	Agency placement	30	14.71
	Missing values	4	1.96

4.3. Measuring Instruments

The Job Demands-Resources Scale (JDRS) [87] was administered to measure emergency nurses' job demands and resources. The study included 29 items: 11 to measure job demands and 18 to measure job resources. Job demands included three subscales: challenge (four items, e.g., "My job requires me to work very hard."), emotional (three items, e.g., "Does your work put you in emotionally upsetting situations?"), and hindrance (four items, e.g., "I have to go through a lot of red tape to get my job done"). Job resources included six subscales: relationship with co-workers (three items, e.g., "Can you count on your co-workers when you come across difficulties in your work?"), relationship with supervisor (three items, e.g., "Do you get on well with your supervisor?"), role clarity (three items, e.g., "Do you know exactly what other people expect of you in your work?"), career progress (three items, e.g., "Does your job offer you the possibility to progress financially?"), autonomy (three items, e.g., "Does your job offer you the possibility of independent thought and action?"), and equipment (three items, e.g., "Do you have sufficient equipment to do your work tasks?"). Responses were rated on a Likert scale, ranging from 1 (never) to 5 (always). The JDRS is valid, reliable, and equivalent across different organizations [87] in a South African context [88].

The Capability Set for Work Questionnaire (CSWQ) [27] was used to measure emergency nurses' work capabilities. The CSWQ measures seven predetermined work values:

(1) using knowledge and skills, (2) developing knowledge and skills, (3) involvement in important decisions, (4) building and maintaining meaningful relationships at work, (5) setting own goals, (6) earning a good income, and (7) contributing to something valuable. For each of these seven values, the emergency nurses were requested to indicate whether (a) they considered the work value important (importance: e.g., "How important is it to you to be able to use your knowledge and skills at work?"), (b) their work offered them sufficient opportunities to achieve it (enablement: e.g., "Does your current work offer you enough opportunities to do that?"), and (c) they succeeded in achieving it (achievement: e.g., "To what extent do you succeed in doing so?"). The items were rated on a Likert scale, ranging from 1 (totally not) to 5 (to a very great extent). The CSWQ has convergent, predictive, and incremental validity [89] and is reliable (ω =.77) [29].

The World Health Organization Health and Work Performance Questionnaire (HPQ) [90] was used to assess emergency nurses' work performance. The HPQ has four self-rated items (e.g., "How would you rate your performance/effectiveness compared to your peers?"). Responses were rated on a Likert scale, ranging from 1 (low) to 10 (top). The HPQ is valid and reliable in assessing employees' work performance perceptions [27].

The Turnover Intention Scale (TIS) [91] was administered to assess emergency nurses' intention to leave. The TIS has three items, measured on a Likert-type scale, ranging from 1 (totally disagree) to 5 (totally agree). An example of an item is "I am actively looking for other jobs.". The TIS is a valid and reliable measure to assess intention to leave. According to a study conducted by Moller and Rothmann [92] among agribusiness managers in the South African context, the TIS reported a Cronbach's alpha coefficient of .83.

4.4. Research Procedure

The North-West University Health Research Ethics Committee (NWU-HREC) provided ethics clearance for the study (NWU-00273-21-A1). Moreover, the researcher obtained permission from four private hospital groups, the corresponding hospital, and the emergency department management, as well as the Provincial Department of Health for the participating public hospital. Data was collected via an online platform (i.e., QuestionPro) and hard-copy booklets. Most of the participants completed a hard-copy survey (91.18%).

The research purpose, that participation in the study was voluntary, and that all information and responses would be kept confidential and anonymous were explained to the participants. The researcher provided an explanation of the research to potential participants by means of a separate informed consent form and face-to-face where possible. Potential participants were asked to read through the informed consent form and indicate whether they want to participate in the research. The informed consent form informed the potential participant on the purpose of the study, what the data will be used for, who will have access to the information, their rights, and that participation is voluntary. After providing consent, participants participated in the study by completing the survey on a separate booklet or online platform for those who opted to complete the online survey.

4.5. Data Analysis

SPSS Version 27 [93] and Mplus 8.8 [94] were utilized for the data analyses. Goodness-of-fit indices and information criteria were used to assess model fit and, ultimately, select the model that fitted the data best [95]: the chi-square statistic (the test of absolute fit of the model), standardized root mean residual (SRMR), root mean square error of approximation (RMSEA), Tucker-Lewis index (TLI), and comparative fit index (CFI). TLI and CFI values higher than .90 indicate an acceptable value, with a value higher than .95 indicating an excellent fit. Score values for SRMR and RMSEA below .08 with a 90% confidence interval, not including zero, indicate acceptable values [96].

Associations between job demands, job resources, work capabilities, work performance, and intention to leave were investigated using Pearson correlations [97]. In

addition, point biserial correlations were used to estimate the relationships between capabilities, job demands and resources, work performance, and intention to leave.

Latent profile analysis (LPA) was used to determine different emergency nurse JD-R profiles through Mplus 8.8 [94]. The maximum likelihood with robust standard errors (MLR) was utilized to estimate multiple latent profiles. A model was retained if it showed a significant improvement from the reference model to the model with more profiles. Models were compared based on their Bayesian information criterion (BIC), Akaike information criterion (AIC), and sample-size adjusted Bayesian information criterion (ABIC) values [96, 98]. The decision to select the model with the optimal number of profiles was made using the Lo-Mendell-Rubin test (LMR LR) [99], the adjusted Lo-Mendell-Rubin test (aLMR), and the bootstrapped likelihood ratio test (BLRT) [96]. Entropy values (ranging from 0 to 1) were used to assess profile verification quality. An entropy value close to 1 indicates a suitable classification. The average latent class probabilities were investigated to determine the probability of correct class membership. A probability score above .80 suggests good membership probability [100].

Logistic regression analysis was performed on the seven capabilities as binary outcomes and JD-R profiles. In addition, multiple regression analyses were employed to investigate the effects of JD-R profiles and capabilities on job performance and intentions to leave. Mplus 8.8 [94] was used to perform analyses of the indirect effects of job demands-resources profiles on work performance and intentions to leave.

5. Results

5.1. Measurement Models of Job Demands-Resources, Performance, and Intention to Leave

The researchers used confirmatory factor analysis (CFA) to evaluate the measurement models of job demands, job resources, performance, and intention to leave. From Table 2, it is evident that the fit statistics obtained were acceptable: $\chi^2 = 906.97$ ($df = 539$; $p < .001$), CFI = .96, TLI = .95, RMSEA = .06 [0.05, 0.07, $p = .021$], SRMR = .07.

Table 2. Fit statistics of the Measurement Model of Job Demands-Resources, Performance, and Intention to Leave

Model	χ^2	*df*	CFI	TLI	RMSEA	95% CI	SRMR
1	906.97**	539	.96	.95	.06*	[.05, .07]	.07

Notes: χ^2 = Chi-square; *df* = degrees of freedom; CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root mean square error of approximation; CI = confidence interval; SRMR = standardized root mean square residual; ** $p < .01$; * $p < .05$

As seen in Table 3, the sizes of the factor loadings of the items on their target factors were acceptable: challenge demands: $\lambda = .56$ to .88 (mean = .72); emotional demands: $\lambda = .65$ to .89 (mean = .75); hindrance demands: $\lambda = .62$ to .94 (mean = .77); relationship with co-workers: $\lambda = .74$ to .89 (mean = .83); relationship with supervisor: $\lambda = .87$ to .94 (mean = .90); role clarity: $\lambda = .71$ to .82 (mean = .76); career progress: $\lambda = .71$ to .82 (mean = .76); autonomy: $\lambda = .71$ to .85 (mean = .78); equipment: $\lambda = .74$ to .90 (mean = .81); performance: $\lambda = .86$ to .93 (mean = .89); and intention to leave: $\lambda = .79$ to .98 (mean = .90). Therefore, the factors were well-defined and aligned with theoretical expectations. The guidelines of Abma et al. [27] were followed to use the average scores of the capability set.

5.2. Descriptive Statistics, Reliabilities, and Correlations

The McDonald's omega reliabilities, means, standard deviations, and Pearson correlations of the variables used in the study are reported in Table 3. McDonald's omega coefficients above .70 were obtained for all the scales, indicating acceptable reliability [101].

Regarding emergency nurses' job demands (as shown in Table 3), only emotional demands were statistically significantly and negatively associated with their capability set ($p < .01$, small effect). However, all six job resources were statistically significantly and

positively related to the capability set, with relationship with the supervisor, career progress, and autonomy at work showing the largest effect sizes. Regarding the associations between emergency nurses' capability set and their functionings, only intention to leave was statistically significantly and negatively associated with their capability set ($p < .01$).

Not shown in Table 2 are the associations between emergency nurses' job demands and resources and their work capabilities. Challenge, emotional, and hindrance job demands were significantly associated with the building and maintaining of meaningful relationships at work (r = -.30, r = -.28, and r = -.22, respectively). All job resources were statistically significantly related to all the work capabilities, except for relationships with co-workers (with setting own goals) and equipment (with building and maintaining meaningful relationships at work). The associations with at least a medium effect were as follows: relationships with co-workers – building and maintaining meaningful relationships at work (r = .30); relationships with supervisors – involvement in important decisions (r = .42), building and maintaining meaningful relationships at work (r = .33), earning a good income (r = .36), and contributing to something valuable (r = .38); role clarity – involvement in important decisions (r = .28) and contributing to something valuable (r = .29); career progress – developing knowledge and skills (r = .36), involvement in important decisions (r = .35), setting own goals (r = .33), earning a good income (r = .32), and contributing to something valuable (r = .35); autonomy at work – using (r = .31) and developing (r = .33) knowledge and skills, involvement in important decisions (r = .39), building and maintaining meaningful relationships at work (r = .35), earning a good income (r = .29), and contributing to something valuable (r = .36); equipment – developing knowledge and skills (r = .32), earning a good income (r = .28), and contributing to something valuable (r = .29). Additionally, autonomy at work, career progress, and relationships with supervisors were associated with the most emergency nurse work capabilities (6, 5, and 4, respectively).

Table 3. Descriptive Statistics, Reliabilities, and Correlations of the Scales

Variable	ω	Mean	*SD*	1	2	3	4	5	6	7	8	9	10	11
1. Challenge demands	.79	4.14	0.74	–	–	–	–	–	–	–	–	–	–	–
2. Emotional demands	.76	3.16	1.02	.68**	–	–	–	–	–	–	–	–	–	–
3. Hindrance demands	.82	2.37	0.95	.58**	.76**	–	–	–	–	–	–	–	–	–
4. Co-worker relationship	.81	4.14	0.77	-.14	-.38**	-.50**	–	–	–	–	–	–	–	–
5. Supervisor relationship	.89	3.85	1.04	-.20**	-.47**	-.39**	.64**	–	–	–	–	–	–	–
6. Role clarity	.70	4.04	0.71	-.22**	-.39**	-.52**	.51**	.59**	–	–	–	–	–	–
7. Career progress	.77	2.81	1.05	.01	.04	.08	.19**	.46**	.53**	–	–	–	–	–
8. Autonomy at work	.78	3.60	0.90	-.19**	-.33**	-.27**	.61**	.70**	.76**	.73**	–	–	–	–
9. Equipment	.80	4.00	0.79	-.15*	-.34**	-.35**	.49**	.60**	.71**	.51**	.69**	–	–	–
10. Capability set	.93	0.50	0.33	-.11	-.18**	-.10	.30**	.46**	.37**	.45**	.48**	.36**	–	–
11. Performance	.92	8.27	1.31	-.10	-.24**	-.28**	.15*	.14*	.32**	.03	.20**	.20**	.15*	–
12. Intention to leave	.91	3.03	1.29	.44**	.48**	.47**	-.39**	-.48**	-.35**	-.23**	-.36**	-.37**	-.27**	-.13

Notes: ω = McDonald's omega coefficient; *SD* = standard deviation; ** $p < .01$; * $p < .05$; $r < .30$ = small effect; $.30 < r < .50$ = medium effect; $r > .50$ = large effect.

5.3. Latent Profile Analysis

Emergency nurses' JD-R profiles were investigated using factor scores saved from the measurement model. To control for measurement error, greater weightings were assigned to items with smaller errors [102]. Table 4 reports on the four profiles analyzed.

Evident in Table 4, Profile 2 fitted the data better than Profile 1: ΔAIC = -441.43; ΔBIC = 408.53; ΔaBIC = -440.22; LMR LR (p > .01); aLMR LR (p > .01); BLRT (p < .01). However, Profile 3 fitted the data better when compared to Profile 2: ΔAIC = -182.53; ΔBIC = -149.65; ΔaBIC = -181.33; LMR LR ($p > .01$); aLMR LR ($p > .01$); BLRT ($p < .01$). Profile 4 showed a better fit than Profile 3: ΔAIC = -92.84; ΔBIC = -59.96; ΔaBIC = -91.64; LMR LR ($p > .01$);

aLMR LR ($p > .01$); BLRT ($p < .01$). Although Profile 5 fitted the data better than Profile 4 – ΔAIC = -63.37; ΔBIC = -30.49; ΔaBIC = -62.16; LMR LR ($p > .01$); aLMR LR ($p > .01$); BLRT ($p < .01$) – Profile 4 showed better member assignments and is aligned with other research that identified four JD-R profiles [29, 66]. Therefore, it was decided to proceed with four latent JD-R profiles.

Table 4. Comparisons of Different Models of JD-R Profiles

Model	AIC	BIC	aBIC	Entropy	LMR LR test p-value	aLMR LR test p-value	BLRT p-value	Smallest class membership
Profile 1	3553.54	3612.72	3555.70	-	-	-	-	-
Profile 2	3112.11	3204.19	3115.48	.83	.016	.017	.001**	45.96%
Profile 3	2929.58	3054.54	2934.15	.89	.080	.083	.001**	16.67%
Profile 4	2836.74	2994.58	2842.51	.86	.292	.297	.001**	10.61%
Profile 5	2773.37	2964.09	2780.35	.89	.281	.286	.001**	10.10%

Notes: AIC = Akaike information criterion; BIC = Bayesian information criterion; aBIC = adjusted Bayesian information criterion; LMR LR = Lo-Mendell-Rubin test; aLMR LR = adjusted Lo-Mendell-Rubin test; BLRT = bootstrapped likelihood ratio test; ** $p < .01$.

Profile 1 had 43 (22%) member assignments, Profile 2 had 42 (21%), Profile 3 had 21 (11%), and Profile 4 had 92 (46%), indicating acceptable membership proportions. The average latent profile probabilities were .94, .92, .94, and .91 for Profiles 1, 2, 3, and 4, respectively. Furthermore, the entropy value was .86, indicating acceptable classification [96]. The assumption is that local independence within profiles was met [103]. The four identified emergency nurse JD-R profiles are shown in Figure 2.

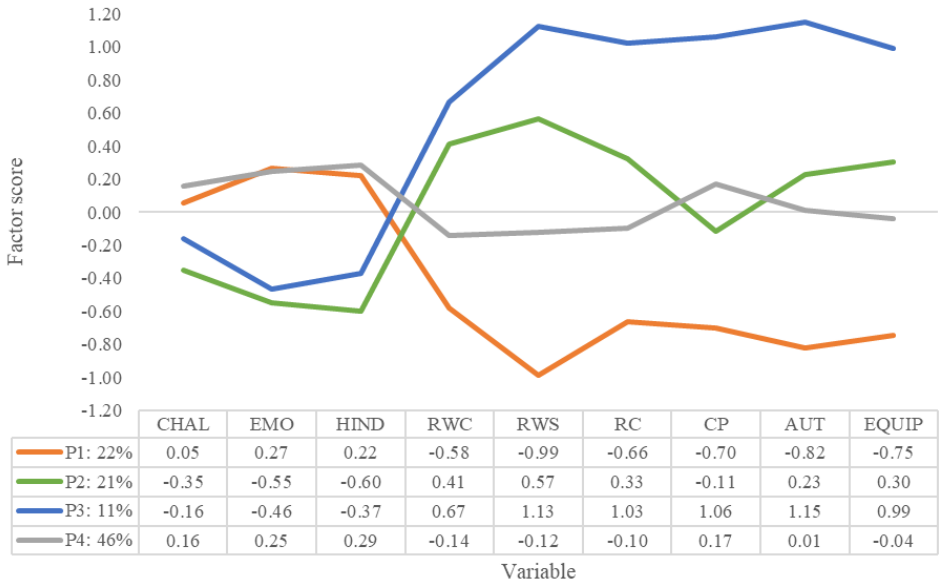


Figure 2. Latent JD-R Profiles

Notes: CHAL = challenge demands; EMO = emotional demands; HIND = hindrance demands; RWC = relationship with co-workers; RWS = relationship with supervisor; RC = role clarity; CP = career progress; AUT = autonomy at work; EQUIP = equipment; P1 = demanding job; P2 = resourceful job; P3 = rich job; P4 = poor job.

Following previous research [29, 66], the four identified JD-R profiles illustrated in Figure 2 are interpreted as follows: Profile 1 – poor job: emergency nurses in this profile have above-average emotional and hindrance demands with low job resources; Profile 2 – resourceful job: emergency nurses in this profile have below-average job demands, above-

average relationships with co-workers and supervisors, role clarity, autonomy, and equipment, and slightly below-average career progress; Profile 3 – rich job: emergency nurses in this profile have below-average job demands and high job resources; and Profile 4 – demanding job: emergency nurses in this profile have average to above-average job demands and low job resources.

5.4. Regression Analysis

5.4.1. Logistic regression analyses

A direct logistic regression analysis was performed on the seven capabilities as outcomes and JD-R profiles. (See Table 5 for a summary of the results.)
The following results were derived from the odds ratios of the statistically significant JD-R profiles as predictors of specific capabilities (see Table 5): (a) a poor job was associated with a lower capability to use knowledge and skills, develop new knowledge and skills, develop and maintain meaningful relationships, and contribute to something valuable; (b) a rich job was associated with a higher capability to develop new knowledge and skills, be involved in decision making, develop and maintain meaningful relations, set own goals, earn a good income, and contribute to something valuable; and (c) a resourceful job was associated with the capability to earn a good income and contribute to something valuable. Based on these results, Hypothesis 1 is partially accepted.

Table 5. Binary Logistic Analyses with JD-R Profiles as Independent Variables and Capabilities as Dependent Variables

Variable	χ^2	*df*	R^2	Percentage predicted			HL test	Significant predictors (compared to a demanding job)
				CC	CNC	Overall		
UKS	11.60**	3	.08	84.8	33.3	68.1	NS	Low UKS - Poor job [Wald=4.76*, OR=0.44 (0.21, 0.92)]
DKS	18.48**	3	.12	86.7	34.2	67.2	NS	High DKS - Rich job [Wald=3.89*, OR=4.61 (1.02, 21.00)]; Low DKS - Poor job [Wald=9.19**, OR=2.06 (0.15, 0.67)]
IID	31.10**	3	.19	21.3	96.1	68.6	NS	High IID - Rich job [Wald=8.15**, OR=4.84 (1.64, 14.29)]; Low IID - Poor job [Wald=10.91**, OR=0.16 (0.05, 0.47)]
MRW	21.33**	3	.13	87.0	33.3	70.5	NS	High MRW - Rich job [Wald=5.94*, OR=6.55 (1.45, 29.71)]; Low MRW - Poor job [Wald=5.65*, OR=0.41 (0.20, 0.86)]
SOG	14.70**	3	.09	85.5	28.7	59.3	NS	High SOG - Rich job [Wald=6.48**, OR=5.31 (1.47, 19.19)]
EGI	23.70**	3	.17	27.7	94.9	79.4	NS	High EGI - Rich job [Wald=18.18**, OR=9.75 (3.42, 27.77)]; High EGI - Resourceful job [Wald=6.34**, OR=3.00 (1.28, 7.06)]
CSV	32.51**	3	.20	46.7	82.1	66.2	NS	High CSV - Rich job [Wald=8.59**, OR=5.67 (1.78, 18.08)]; High CSV - Resourceful job [Wald=4.19*, OR=2.17 (1.03, 4.54)]; Low CSV - Poor job [Wald=8.58**, OR=0.26 (0.11, 0.64)]

Notes: UKS = use of knowledge and skills; DKS = development of knowledge and skills; IID = involvement in important decisions; MRW = building and maintaining meaningful relationships at work; SOG = setting own goals; EGI = earning a good income; CSV = contributing to something valuable; R^2 = Nagelkerke R^2; CC = correct prediction of being capable; CNC = correct prediction of not being capable; HL test = Hosmer and Lemeshow test; NS = not significant; ** $p < .01$; OR (odds ratio) = Exp(B).

5.4.2. Multiple regression analyses

Multiple regression analyses were conducted to investigate the impact of the JD-R profiles on capabilities and the impact of these variables on emergency nurses' job performance and intentions to leave. Dummy variables were created for the different JD-R profiles using the demanding job as the comparison group. A dummy variable is used when a categorical variable has more than two categories [97]. Dummy variables are, thus, helpful in representing groups of people with only zeros and ones, so it is possible to use categorical variables in regression analysis. The results of the multiple regression analyses are presented in Table 6.

Concerning the capability set as the dependent variable, Table 6 shows that JD-R profiles (as independent variables) predicted the capability set statistically significantly with a medium effect: $\beta_{\text{Rich job}} = .30$, $p < .001$; $\beta_{\text{Poor job}} = -.25$; $R^2 = .19$, $p < .001$. A rich job was positively associated with the capability set, while a poor job was negatively associated with the capability set. Regarding job performance as the dependent variable, Table 6 shows that JD-R profiles and the capability set (as independent variables) predicted job performance statistically significantly with a small effect: $\beta_{\text{Resourceful job}} = .18$; $R^2 = .07$, $p < .017$. A resourceful job was positively associated with job performance. Regarding intention to leave as the dependent variable, Table 7 shows that JD-R profiles and the capability set (as independent variables) predicted intentions to leave statistically significantly with a large effect: $\beta_{\text{Rich job}} = -.24$, $p < .001$; $\beta_{\text{Resourceful job}} = -.35$, $p < .001$; $\beta_{\text{Poor job}} = .14$, $p < .001$; $R^2 = .25$). A rich job and a resourceful job were negatively associated with intention to leave, while a poor job was positively associated with intention to leave.

Table 6. Multiple Regression Analyses of the JD-R Profiles and Capabilities on Job Performance and Intention to Leave

Model	Variable	beta	*SE*	β	*p*	R^2	*F*	*p*
Capability set								
Model 1	Rich job	.32	.07	.30	<.001**	.19	15.84 *df* (3, 200)	<.001**
	Resourceful job	.08	.06	.10	.154			
	Poor job	-.20	.06	-.25	<.001**			
Job performance								
Model 1	Rich job	.24	.19	.09	.214	.07	4.55 *df* (3, 194)	.004**
	Resourceful job	.36	.15	.19	.014**			
	Poor job	-.23	.14	-.12	.119			
Model 2	Rich job	.18	.20	.07	.363	.07	3.63 *df* (3, 194)	.007**
	Resourceful job	.35	.15	.18	.017*			
	Poor job	-.19	.15	-.10	.208			
	Capability set	.17	.19	.07	.354			
Intention to leave								
Model 1	Rich job	-.59	.14	-.27	<.001**	.24	20.88 *df* (3, 196)	<.001**
	Resourceful job	-.50	.11	-.36	<.001**			
	Poor job	.27	.11	.17	.014**			
Model 2	Rich job	-.52	.15	-.24	.001**	.25	16.43 *df* (3, 196)	<.001**
	Resourceful job	-.57	.11	-.35	<.001**			
	Poor job	.22	.11	.14	.050*			
	Capability set	-.23	.14	-.11	.111			

Notes: *SE* = standard error; β = beta; R^2 = Nagelkerke R^2; * $p < .05$; ** $p < .01$.

Not shown in Table 6 are the results of the multiple regression analyses with specific capabilities as independent variables and job performance and intention to leave as dependent variables. The following capabilities were negatively associated with job performance: using knowledge and skills ($F_{(1, 196)} = 7.32$, $p = .007$, $\beta = .19$, $R^2 = .04$) and contributing

to something valuable ($F_{(1, 198)}$ = 6.62, p = .011, β = .18, R^2 = .03). Hypothesis 2 is partially accepted. The following capabilities were negatively associated with intentions to leave: being involved in important decisions ($F_{(1, 198)}$ = 9.83, p = .002, β = -.27, R^2 = .05), developing and maintaining meaningful work relationships ($F_{(1, 198)}$ = 13.72, p < .001, β = -.26, R^2 = .07), setting own goals ($F_{(1, 198)}$ = 6.89, p = .009, β = -.18, R^2 = .03), earning a good income ($F_{(1, 198)}$ = 22.17, p < .001, β = -.32, R^2 = .10), and contributing to something valuable ($F_{(1, 198)}$ = 6.43, p = .012, β = -.18, R^2 = .03). Hypothesis 3 is partially accepted.

5.4.3 Indirect effects

The procedure suggested by [104] was used to determine how JD-R profiles affect performance and intentions to leave via the work capability set of emergency nurses. For indirect effects, bootstrapping was used to construct two-sided bias-corrected 95% confidence intervals (CI's).

The results showed that a rich job (β = -.04, SE = .02, p = .035 [-.09, -.01]) indirectly and negatively affected intentions to leave via a weak capability set. Furthermore, a poor job (β = .04, SE = .02, p = .072 [.01, .09]) indirectly affected intention to leave via a weak capability set. Hypotheses 4a is rejected and hypothesis 4b is partially accepted.

6. Discussion

This study investigated emergency nurses' job demands-resources (JD-R) profiles and their effect on their work capabilities and functioning (i.e., job performance and intention to leave). Emergency nurses' job demands and resources co-occurred in four distinct profiles, namely, a demanding job, resourceful job, rich job, and poor job. Specifically, having a rich job and not having a poor job (compared to a demanding job) significantly impacted emergency nurses' capability set and specific capabilities. Having a resourceful job and two capabilities, namely, using knowledge and skills and contributing to something valuable, affected emergency nurses' job performance. Furthermore, poor and demanding jobs (compared to rich and resourceful jobs) predicted emergency nurses' intentions to leave. A rich job (compared to a demanding job) was significantly associated with six of the seven capabilities, while a resourceful job was associated with earning a good income and contributing to something valuable.

From the results, four emergency nurse JD-R profiles were identified [29, 66], namely, a poor job (above-average emotional and hindrance demands, and low job resources), a resourceful job (below-average job demands, above-average relationships with co-workers and supervisors, role clarity, autonomy, and equipment, and slightly below-average career progress), a rich job (below-average job demands and high job resources), and a demanding job (average to above-average job demands and low job resources).

An important finding of this study concerns the balance between job demands and resources in the four JD-R profiles. Challenge, emotional, and hindrance demands were high in poor and demanding jobs. However, the most significant differences between the four JD-R profiles, especially rich, resourceful, and poor jobs, were evident in job resources (including relationships with co-workers and supervisors, role clarity, job autonomy, and equipment). rather than job demands. This finding is in line with the value of resources according to the COR theory [15, 43]. However, the demanding JD-R profile (which included 46% of the participants) showed slight differences between job demands and resources, which might imply that job resources are not sufficient to counter job demands.

Regarding job demands, only emotional demands were negatively associated with emergency nurses' capability set. Interestingly, challenge, emotion, and hindrance job demands were all negatively associated with building and maintaining meaningful relationships (which was one of the strongest capabilities of emergency nurses. Resources such as good colleague and supervisor relations were also moderately to strongly associated with the capability set. Consequently, emergency nurses may have lower capabilities to convert

emotional demands into capabilities when they lack relational resources and the capability to build and maintain meaningful relationships. In this regard, Kinman and Leggetter [105] found that enhancing emotional support might help nurses manage emotional demands. The poor and demanding JD-R profiles in this study also showed that above-average job demands (specifically emotional demands) combined with less job resources (specifically relational resources).

As expected, the results of this study showed that JD-R profiles of emergency nurses matter for their work capabilities. A rich job was associated with a stronger capability set, while a demanding job was associated with a weaker set. A rich job was associated with a higher capability to develop new knowledge and skills, be involved in decision-making, develop and maintain meaningful relations, set own goals, earn a good income, and contribute to something valuable. The same pattern was found for a demanding job compared to a poor job, with nurses in the poor job profile having a poorer capability set than those in the demanding job profile. Notably, emergency nurses in a poor job had a weaker capability set than those in a demanding job. Concerning a poor job, the JD-R profiles showed remarkable differences from a demanding job in terms of resources. Further analyses of specific capabilities and JD-R profiles showed that emergency nurses in a poor job lacked the following capabilities: using knowledge and skills, developing new knowledge and skills, developing and maintaining meaningful relationships, and contributing to something valuable. Interestingly, emergency nurses in the resourceful job had stronger capabilities to earn a good income and contribute to something valuable than those in the demanding job profile.

These results support using an opportunity-based rather than a means-based framework to study emergency nurses' functioning [24, 25]. The resources available to emergency nurses hold value depending on what they can achieve and when they can use or convert them [60]. Consequently, while emergency nurses must have the relevant resources to manage their job demands, they need to convert the available job resources into opportunities required to achieve valued work outcomes [33] through conversion factors [25].

Emergency nurses' capability set was positively associated with their work performance and negatively associated with their intention to leave. Similar results were found among special education teachers in Namibia [29]. In the multiple regression analysis, the capability set did not contribute significantly to their work performance and intention to leave. However, the capability set was associated with work performance in the correlational analysis. Specific capabilities (using knowledge and skills and contributing to something valuable) also predicted work performance when JD-R profiles were not included in the regression equation. Similarly, a lack of the following capabilities was associated with emergency nurses' intentions to leave: being involved in important decisions, developing and maintaining meaningful work relationships, setting their own goals, earning a good income, and contributing to something valuable.

JD-R profiles were significantly associated with work performance and intention to leave. Rich and resourceful jobs prevented intentions to leave, while a poor job contributed to intentions to leave. Although JD-R profiles (specifically the rich and poor profiles in contrast with the demanding job profile) affect the capability set of emergency nurses, they also had stronger effects on the intention to leave than the capability set itself. The results confirmed that the work capability set mediated the relationships between JD-R profiles and intentions to leave. No such effect was found for performance.

This study's findings align with the sustainable employability model [24]. Regarding the effect of emergency nurses' work capabilities on their functioning at work, using knowledge and skills and contributing to something valuable were positively associated with their job performance. In addition, developing and maintaining meaningful work relationships, setting goals, earning a good income, and contributing to something valuable were negatively associated with intention to leave [29].

This study makes the following contributions to the literature. Firstly, previous studies on the job demands and resources of nurses in South Africa used a variable-centered approach, whereas the current study followed a person-centered approach. The co-occurrences between job demands and resources provide insight into the relationships between job demands and resources in different latent profiles [67]. For example, the results showed larger differences between job resources (compared to job demands) in the different profiles. In line with COR theory [15], emergency nurses must be driven to obtain valued resources and protect the ones they already have. Moreover, the latent profiles influenced work capabilities, the capability set, work performance, and intentions to leave differently. Secondly, this study provides insight into the benefits of specific job demands and resources that affect the capabilities and functioning of emergency nurses. For example, the results showed that job autonomy, relationships with supervisors, and emotional and hindrance demands played a crucial role in the profiles. Thirdly, the study confirms the importance of job resources in the capability approach [25], as they relate to conversion factors and dealing with constraints. Job resources have instrumental value in extending the freedom of emergency nurses and developing their sustainable employability.

7. Practical Implications

Policymakers should address emergency nurses' JD-R profiles (not only job demands and resources in isolation) and implement interventions that increase job resources, especially autonomy at work, career progress, and relationships with supervisors. This will probably improve their work capabilities and performance, reduce their intention to leave and contribute to their sustainable employability [24, 27, 33].

8. Limitations and Recommendations for Future Research

This study had various limitations. Firstly, the study focused on a specific group of professionals (i.e., emergency nurses). Generalization of results to other professionals and work contexts needs to be done with caution. Secondly, the sample was drawn from a single province. Future research should be done with larger and more diverse samples of emergency nurses in South Africa. Although the results were aligned with previous research on the manifestation of job demands and job resources in profiles [66], a larger sample could potentially have produced more profiles, and a larger, more diverse group across different demographic variables could add further evidence related to such profiles. Thirdly, scientific information is needed regarding the instrumental role of job resources in developing conversion factors and work capabilities. Finally, a cross-sectional design was used, which did not allow for commenting on the stability of JD-R profiles over time. A longitudinal study would be valuable in providing such conclusions [82].

9. Conclusions

The study investigated emergency nurses' JD-R profiles and the effect of these on their capabilities and two functionings at work, namely, performance and intention to leave. Their job demands and job resources co-occurred in four distinct profiles (i.e., demanding job, resourceful job, rich job, and poor job). The combination of job demands and job resources affected emergency nurses' work capabilities differently. Although almost half of the emergency nurses were in a demanding job, it was associated with more work capabilities than the poor job participants. However, a rich job was associated with most work capabilities among these professionals. Regarding emergency nurses' functionings at work, the rich and resourceful jobs were negatively associated with intention to leave, while a poor job was positively associated with intention to leave.

The person-centered approach of this study provides insights into the different manifestations of job demands and job resources among emergency nursing professionals in South Africa, as well as these effects on their work capabilities, which impact their

performance and intention to leave. These insights should inform policymakers pursuing the sustainable employability of emergency nurses in South Africa.

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Appendix

1. Measuring instruments used in this research

Table 1. Job Demands-Resources Scale (JDRS)

Variable	Item	λ
Job Demands		
Challenge demands	1. My job requires me to work very hard.	.56
	2. I experience severe time pressures in my work.	.86
	3. I feel the weight of the amount of responsibility I have at work.	.88
	4. My job requires me to use a number of complex or high-level skills.	.59
Emotional demands	1. Are you confronted in your work with things that affect you personally?	.71
	2. Do you have contact with difficult people in your work?	.65
	3. Does your work put you in emotionally upsetting situations?	.89
Hindrance demands	1. I have to go through a lot of red tape to get my job done.	.69
	2. I do not fully understand what is expected of me.	.62
	3. I receive conflicting requests from two or more people.	.82
	4. I have many hassles to go through to get my work done.	.94
Job Resources		
Co-worker relationship	1. Can you count on your colleagues when you come across difficulties in your work?	.74
	2. If necessary, can you ask your colleagues for help?	.89
	3. Do you get on well with your colleagues?	.86
Supervisor relationship	1. Can you count on your supervisor when you come across difficulties in your work?	.94
	2. Do you get on well with your supervisor?	.89
	3. In your work, do you feel appreciated by your supervisor?	.87
Role clarity	1. Do you know exactly what other people expect of you in your work?	.74
	2. Do you know exactly for what you are responsible?	.82
	3. Do you receive sufficient information on the results of your work?	.71
Career progress	1. Does your job offer you the possibility to progress financially?	.82
	2. Does your organization give you opportunities to follow training courses?	.75
	3. Does your job give you the opportunity to be promoted?	.71
Autonomy at work	1. Does your job offer you the possibility of independent thought and action?	.71
	2. Do you have freedom in carrying out your work activities?	.85
	3. Do you have influence in the planning of your work activities?	.77
Equipment	1. Do you have sufficient equipment to do your work tasks	.74
	2. Is the equipment you have to your disposal in good working condition?	.90
	3. Do you feel that you are confident in the use of your equipment?	.79

Notes: λ = standardized factor loadings, all $p < .001$

Table 2. The Capability Set for Work Questionnaire (CSWQ)

Variable	Item
Work Capabilities	
Using knowledge and skills	1a. How important is it to you to be able to use your knowledge and skills at work?
	1b. Does your current work offer you enough opportunities to do that?
	1c. To what extent do you succeed in doing so?
Developing knowledge and skills	2a. How important is it for you that you can develop your knowledge and skills at work?
	2b. Does your current work offer you enough opportunities to do that?
	2c. To what extent do you succeed in doing so?
Involvement in important decisions	3a. How important is it for you to be involved in important decisions at work?
	3b. Does your current work offer you enough opportunities to do that?
	3c. To what extent do you succeed in doing so?
Meaningful work relationships	4a. How important is it for you to have or to be able to build meaningful working relationships at work?
	4b. Does your current work offer you enough opportunities to do that?
	4c. To what extent do you succeed in doing so?
Setting own goals	5a. How important is it for you to set your own goals at work?
	5b. Does your current work offer you enough opportunities to do that?
	5c. To what extent do you succeed in doing so?
Earning a good income	6a. How important is it for you to earn a good income?
	6b. Does your current work offer you enough opportunities to do that?
	6c. To what extent do you succeed in doing so?
Contributing to something valuable	7a. How important is it for you to be able to contribute to creating something valuable at work?
	7b. Does your current work offer you enough opportunities to do that?
	7c. To what extent do you succeed in doing so?

Notes: λ = standardized factor loadings, all $p < .001$. The recommendation by Abma et al. (2016) were followed that the average scores need to be used for the work capabilities.

Table 3. The World Health Organization Health and Work Performance Questionnaire (HPQ)

Variable	Item	λ
Performance	1. How would you rate your performance / effectiveness compared to your peers?	.86
	2. How would you rate your patient care compared to that of your peers?	.88
	3. How would you rate the quality of the service that you render compared to your peers?	.93
	4. How would you rate your competence in your work compared to your peers?	.91

Notes: λ = standardized factor loadings, all $p < .001$

Table 4. Turnover Intention Scale (TIS)

Variable	Item	λ
Intention to leave	1. I am actively looking for other jobs.	.79
	2. I feel that I could leave this job.	.98
	3. If I were completely free to choose, I would leave this job.	.94

Notes: λ = standardized factor loadings, all $p < .001$

2. Emergency Nurses' Job Demands-Resources Profiles

Table 5. List of Identified Emergency Nurses' Job Demands-Resources Profiles

Emergency Nurses' Job Demands-Resources Profile	Profile Description
Profile 1: Poor Job	Emergency nurses in this profile have above-average emotional and hindrance demands with low job resources.
Profile 2: Resourceful Job	Emergency nurses in this profile have below-average job demands, above-average relationships with co-workers and supervisors, role clarity, autonomy, and equipment, and slightly below-average career progress.
Profile 3: Rich Job	Emergency nurses in this profile have below-average job demands and high job resources.
Profile 4: Demanding Job	Emergency nurses in this profile have average to above-average job demands and low job resources.