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A study on the multidimensional result-oriented capability of professional workers

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Abstract

An increasing number of freelancers and independent professionals are engaged in short-term and temporary work. There are several studies that define the key intangible resources and abilities of professional employees but there is limited research that examines all of them collectively. Therefore, the aim of this study is to improve our understanding of professional workers' various intangible resources and capabilities by proposing the result-oriented capability (ROC) construct and its subdimensions by analyzing existing literature on knowledge workers, professional employees, psychology and management. The proposed model was empirically tested using the data gathered from 384 professional workers that worked in knowledge-intensive business services (p-KIBS). Construct reliability and validity are analyzed using the IBM Statistical Package for Social Sciences (SPSS) and the Analysis of Moments Structure (AOMS). This research proposes and confirms that ROC has reflective sub-dimensions such as professional expertise, relational capability, operational capability and innovation orientation. The study's findings provide important insights into how to improve professional workers' capabilities. The new measures can be used as diagnostic tools for professional worker recruitment, assessment and training. This can be beneficial for individual professional workers with larger implications for people management, training and development and organizational success.

Keywords: Construct development, Instrument, Knowledge worker, Knowledge-intensive business, Measurement validation, Professional worker, Reliability, Result-oriented capability, Validity.

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Transparency: The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained.

Ethical Statement: This study followed all ethical practices during writing.

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1. Introduction

An increasing number of short-term and temporary jobs carried out by freelancers or independent workers is known as

the "gig economy," derived from a slang term that refers to the way musicians are paid based on the performances ("gigs") [1]. In 2010, the "gig economy" often referred to low-paying jobs but nowadays the "professional gig economy" has grown which involves professional workers with high skills and expertise [1]. These professionals require advanced degrees, extensive training or credentialing and a significant educational investment to obtain such knowledge and skills [2].

Since professional workers are responsible for a higher level of targets in their organizations [3] and key performance indicators [4]. Effective management of these workers is crucial for organizational success. Their positions are highly strategic and their daily tasks are generally fraught with uncertainty. They are more likely to have more complex jobs, to solve more problems, to process more information and to require more skills to do their jobs well [5]. These workers want to work for an organization that will pay them an appropriate wage and provide them with a challenging and interesting job in exchange for performing these complex tasks [6].

The concept of professional workers has been widely debated. Hall [7]; Perkin [8]; Stanford [9]. Kerr, Von Glinow and Schriesheim [10] identified a set of characteristics of the "ideal professional": (1) a recognisable base of knowledge that can be applied; (2) mastery of that knowledge through extended education; (3) autonomy in deciding the application of that knowledge; (4) a strong commitment to the field; (5) a lifelong commitment to professional development. According to the definition, a professional worker shares similarities with the key features of a knowledge worker as defined by Drucker [11]; Turriago-Hoyos, Thoene and Arjoon [12]. Previous research has also concluded that professional workers are the best proxy group for researching knowledge because they share nearly the same key features. Moreover, professional workers are described in an international classification used globally to estimate their national populations [13].

Many studies describe the intangible resources and capabilities of professional workers. Previous research on professional workers focused on several key intangible resources possessed by professional workers and examined the relationship between these key intangible resources and the performance of these professional workers. Dokko, Wilk and Rothbard [14] focused on work experience and examined the effect of the duration of professional workers' work experience in the previous workplace and the duration of experience in the current workplace on the resulting performance in the current workplace. Aljounaidi and Mohamed [15] show that professional workers must have a sufficient level of interpersonal skills, information technology (IT) skills and leadership and management skills. Shujahat, Sousa, Hussain, Nawaz, Wang and Umer [16] conducted research on the relationship between personal knowledge management (PKM) of professional workers and performance. Butt, Nawaz, Hussain, Sousa, Wang, Sumbal and Shujahat [17] examined the relationship between individual knowledge management, innovation and the performance of professional workers.

Therefore, the aim of this study was to improve professional workers' various intangible resources and capabilities. This paper proposes a new construct, result-oriented capability defined as "the ability of professional workers to enable them to deliver the expected results," adopted from the results orientation of Adriaenssen, Johannessen and Johannessen [18].

2. Objectives

The objective of this research is to develop and perform an initial test of the ROC of a professional worker. This research extends previous work in the area of professional workers in various forms. First, we elaborated various professional workers' features into a result-oriented capability construct based on Adriaenssen, Johannessen and Johannessen [18] conceptual paper. Second, we used a 384-dataset of professional workers in Indonesia to investigate the developed construct. The study's findings may provide important insights into how to improve the capabilities of professional workers. The new measures can be used as diagnostic tools for recruiting, assessing and training professional workers. This can be beneficial for professional workers with larger implications for people management, training and development and organizational success.

3. Literature Review

According to Adriaenssen, Johannessen and Johannessen [18], the more professional workers focus on the expected results, the more likely their productivity will increase. Adriaenssen describes these as the characteristics of a result-oriented professional worker. The concept of a result-oriented professional worker has become more relevant since the COVID-19 pandemic. Prior research such as Atkinson's flexible organization [19, 20], Sanchez and Heene's competence-based management [21, 22], and Lundin and Söderholm [23] Theory of Temporary Organization has demonstrated that businesses and organizations can benefit from flexible resources. Prataksita, Sasmoko, Elidjen and Bandur [24] linked flexible professional workers with the triple bottom line of sustainability by illustrating how flexibility in the workplace can reduce the required built environment, improving employee social health and well-being, which is advantageous for firms and organizations. Therefore, the result-oriented capability of professional workers can be the foundation for implementing work flexibility.

The first distinctive feature of professional workers is that they require a variety of skills to deliver the expected results [10, 11, 25, 26]. Therefore, a professional worker must have extensive knowledge in their field. According to Collins [27] and Blackler [28], professional workers can synergize "embedded" and "embodied" knowledge. Embedded knowledge represents technical-theoretical knowledge. In other words, it can answer "know-what" or "know-about" questions referred to as "explicit knowledge" or "visible knowledge." However, it must be accompanied by experience in applying it. Embodied knowledge also known as tacit knowledge actively contributes to the creation of special knowledge (expertise) that can answer the question "knowing how" to solve problems. So the behavior of professional workers is able to synergize between ingrained and embodied knowledge to be able to convert it into new knowledge. Swart [29]. Evers and

van der Heijden [30] refer to professional expertise as the characteristics of individuals who have relevant knowledge and expertise. The keywords in Table 1 represent some aspects of professional workers expertise based on previous research.

Table 1.

Previous studies about professional expertise.

No	Keyword related to professional expertise	Previous study
1	Level of specialist knowledge, education, experience	[31-33]
2	Excellent education	[31, 34]
3	Job knowledge	[31, 35, 36]
4	Prior work experience	[14, 31, 37, 38]
5	Prior occupational experience	[14, 31, 39]

The second characteristic of professional workers is their relational capability. Professional workers do their work through coordination, interaction, collaboration and information exchange with their colleagues or business partners. Relational capabilities are essential for knowledge-based activities. Professionals frequently work in groups and rely on one another to complete complex tasks [40]. Furthermore, relational abilities are important in maintaining positive client relationships [29]. Table 2 displays the keywords that were associated with the professional worker's relational capabilities in previous studies.

Table 2.

Previous studies about relational capability.

No	Keyword related to relational capability	Previous study
1	Communicating with employees based on the logic of a situation	[14, 31]
2	Socially oriented work behaviors	[41-43]
3	Cooperation	[32, 44-46]
4	Interpersonal skill	[29]
5	Client relationship	[29]

The ability to work independently is the third characteristic of professional workers [11, 16]. In general, professional workers are expected to be able to complete tasks using their existing knowledge, expertise and experience. Furthermore, professional workers can do their work and manage their resources both in terms of time and effort. The ability to manage existing resources to produce these outputs is conceptually associated with operational capability [47-51]. Table 3 displays the keywords that were associated with the professional worker's operational capabilities in previous studies.

Table 3.

Previous studies about operational capability.

No	Keyword related to operational capability	Previous study
1	Ability to provide expert opinions	[46, 52]
2	Autonomy	[11, 45, 46, 53, 54]
3	Autonomous role in decision-making processes	[14]

Furthermore, the fourth professional worker characteristic is innovation. According to Drucker [11, 12], professional workers frequently innovate in their work because the nature of their work frequently involves problem solving which stimulates them to provide creative solutions to problems or challenges they face. Table 4 displays the keywords that have been linked to the innovation of professional workers in previous studies.

Table 4.

Previous studies about innovation orientation.

No	Keyword related to innovation orientation	Previous study
1	Innovativeness	[44, 46, 55]
2	Innovation as a job requirement	[56]
3	Creativity	[46]

The four key features of professional workers are professional expertise, relational capability, professional operational capability and innovation orientation. These key features are grouped as "Result Orientation Capability" which is defined as "the ability of professional workers to enable them to deliver the expected results" adopted from the results orientation of Adriaenssen, Johannessen and Johannessen [18]. The dimension, item and measures of the result-oriented capability construct are shown in Table 5.

Table 5.

Dimension, item and measures of result-oriented capability.

Dimension	Item	Measures
Professional expertise (PE)	PE1	I have a formal educational background that supports me in getting the job.
	PE2	I have experience that supports me in getting the job.
	PE3	I have the additional knowledge that supports me in getting the job.
	PE4	I have the specific skills that enable me in getting the job.
Relational capability (RC)	RC1	I am used to working with other people.
	RC2	I have the ability to work well as part of a team.
	RC3	I always try to build positive social interactions into the work.
	RC4	I frequently communicate with people outside my organization or firm.
Operational capability (OC)	OC1	I have the ability to make my own decisions about how to schedule my work.
	OC2	I have the ability to plan how I do my job.
	OC3	I have the ability to make decisions about what methods I use to get my work done.
	OC4	I can use my initiative or personal judgment in carrying out my work.
Innovation orientation (IO)	IO1	I'm often looking for new ways to do things.
	IO2	I often present a unique idea or solution to a problem.
	IO3	I often do jobs that require me to be creative.
	IO4	I have the ability to solve problems for which there are no clear answers.

4. Research Methodology

A quantitative approach is used to investigate the proposed construct. We used the International Standard Classification of Occupations (ISCO) classification [26] to record the job area in the survey. In this study, we focus on professional workers who worked or provided services in the professional knowledge-intensive business services (p-KIBS) area. Construct reliability and validity are analyzed using SPSS and the measurement model is evaluated using AMOS.

The sample selection method uses cluster random sampling based on population distribution across geographical areas in Indonesia. The number of respondents was calculated based on the Krejcie and Morgan [57] sampling framework. A total of 384 professional workers from five provinces with Indonesia having the largest population of professional workers participated in the study. Data was gathered online from June to August 2021 during the surge of the COVID-19 pandemic in Indonesia.

5. Results and Discussion

5.1. Construct Statistical Analysis

Descriptive statistics were used to describe the general demographic information of respondents such as gender, age group, years of experience and level of education. Then all samples across different groups of demographic aspects are tested with Levene statistics to evaluate the samples' homogeneity of variance. Table 6 shows respondents distribution across demographic aspects and Levene statistics results. Based on the Levene statistic result, the ROC variable satisfied the requirement of homogeneity of variance for all samples across different groups of demographic aspects. The significance value of the Levene statistic (p-value) for the result-oriented capability construct is above 0.05.

Table 7 describes the statistical aspects of the variables. The mean and median values of result-oriented capability are both within the lower and upper bounds of the 95% confidence interval for the mean. The data from all three variables is considered to have a central tendency. Moreover, all three variables' absolute values of skewness and kurtosis are within the acceptable range for SEM analysis namely the skewness value is below 3 and the kurtosis value is below 10 [58, 59]. Therefore, based on the variables' central tendency and both skewness and kurtosis values, the data obtained tends to have a normal distribution.

Table 6.

Respondents demography.

Demographic aspect		Number of respondent	Percentage	Descriptive		Test of homogeneity of variances	
				Mean	Std. dev.	Levene	P value
Gender	Male	231	60.2%	5.349	0.436	0.365	0.546
	Female	153	39.8%	5.468	0.453		
Age group	< 30 Years old	63	16.4%	5.209	0.428	1.625	0.183
	30 - 40 Years old	230	59.9%	5.386	0.425		
	40 - 50 Years old	78	20.3%	5.559	0.441		
	> 50 Years old	13	3.4%	5.519	0.574		
Experience	< 10 Years	191	49.7%	5.273	0.410	1.612	0.201
	10 - 20 Years	177	46.1%	5.512	0.441		
	> 20 Years	16	4.2%	5.589	0.536		
Education	Bachelor's degree	288	75.0%	5.373	0.437	0.402	0.526
	Post-graduation and above	96	25.0%	5.467	0.467		

Table 7.
Variable summary.

Variable descriptive		Result-oriented capability
Mean		86.35
95% Confidence interval for mean	Lower bound	85.63
	Upper bound	87.07
5% Trimmed mean		86.72
Median		87
Variance		51.048
Std. deviation		7.145
Minimum		60
Maximum		96
Range		36
Interquartile range		12
Skewness		-0.542
Kurtosis		-0.22

Table 8.
Result oriented capability scale items and measures.

Dimensions	Item	Item-to-total correlation	Kaiser-Meyer-Olkin (KMO) measure	Cronbach's alpha
Professional expertise (PE)	PE1	0.638	0.735	0.694
	PE2	0.722		
	PE3	0.769		
	PE4	0.754		
Relational capability (RC)	RC1	0.76	0.755	0.747
	RC2	0.756		
	RC3	0.748		
	RC4	0.757		
Operational capability (OC)	OC1	0.743	0.783	0.779
	OC2	0.779		
	OC3	0.79		
	OC4	0.792		
Innovation orientation (IO)	IO1	0.796	0.799	0.816
	IO2	0.785		
	IO3	0.806		
	IO4	0.823		

5.2. Construct Structural Analysis

Before continuing to the structural model analysis, each item used in the measurement model is tested to determine its reliability and validity. Table 8 shows that all items have a Kaiser-Meyer-Olkin (KMO) value higher than 0.5 and the Bartlett Test result is lower than 0.05. Cronbach's alpha for all items is above 0.6 and each item has an item-to-total correlation to its respective dimension that is well above 0.6. Therefore, all items meet the reliability and validity standards for structural model analysis.

Based on the structural analysis using Amos 24, the first-order measurement model for ROC was developed (see Figure 1). According to the first-order model, there are four dimensions (constructs): Professional Expertise (PE), Relational Capability (RC), Operational Capability (OC) and Innovation Orientation (IO) which are independent in their prediction of result-oriented capability. The constructs are measured by four items. The first-order model for testing the result-oriented capability of professional workers passed all the required tests: The minimum sample discrepancy based on the chi-squared test ($CMIN/DF$) = 2.018, the Goodness of Fit Index (GFI) = 0.94, the Comparative Fit Index (CFI) = 0.957, the Normed Fit Index (NFI) = 0.919 and the Root Mean Square Error Approximation ($RMSEA$) = 0.052. All results of the fit index such as the adjusted goodness of fit index ($AGFI$), the Tucker-Lewis index (TLI) and the incremental fit index (IFI) are all greater than 0.9. Therefore, the first-order model represents ROC accurately. Furthermore, our results suggest the factor loadings for first order constructs of PE, RC, OC, and IO ranged from 0.70 to 0.46, 0.70 to 0.64, 0.74 to 0.64 and 0.76 to 0.70 respectively.

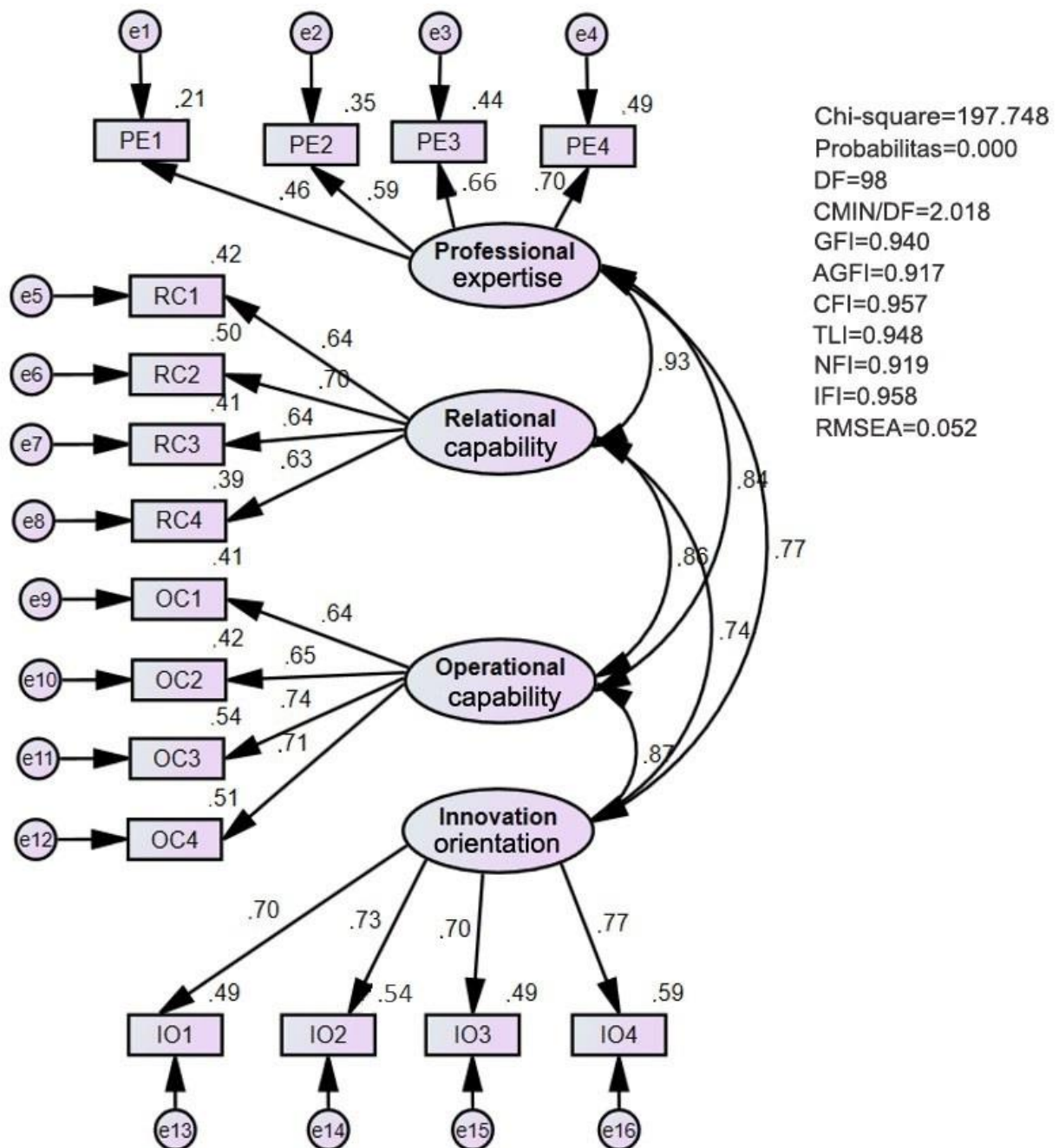


Figure 1.
First-order confirmatory factor analysis result (Measurement model).

We used Amos 24 for second-order confirmatory factor analysis (see Figure 2). First, we assess the model's goodness of fit to indicate how well the model's enables dimension can predict the hypothesized ROC variable. Based on structural equation modeling analysis, the goodness of fit parameters are the minimum sample discrepancy based on the chi-squared test ($\text{CMIN/DF} = 2.191$), the Goodness of Fit Index (GFI) = 0.934, the Comparative Fit Index (CFI) = 0.949, the Normed Fit Index (NFI) = 0.911 and the Root Mean Square Error Approximation (RMSEA) = 0.056. Thus, our second order for ROC passed all goodness of fit parameters.

Then we evaluated each measurement using standardized item loadings, the T coefficient value and composite reliability. Table 9 shows that all measurement items have item loadings above 0.50 except for PE1 which has 0.46 item loadings. At P 0.05, all items with factor loading are significant. The T coefficient value being close to 1.0 implies that our second-order construct perfectly explained the first-order construct model. This result indicates that both models are equivalent [60, 61].

Finally, we evaluated second-order construct reliability and convergent validity. The path leading from ROC as the second order construct to all six social dimensions (constructs) was significant as shown in Table 10. The second order loadings on result oriented capability (ROC) were 0.929 for PE, 0.929 for RC, 0.946 for OC and 0.853 for IO. Each item shows good construct reliability based on its Composite Reliability (CR) score which is higher than 0.7. Result Oriented Capability also has good convergent validity with Average Variance Extracted (AVE) values greater than 0.5 [62, 63].

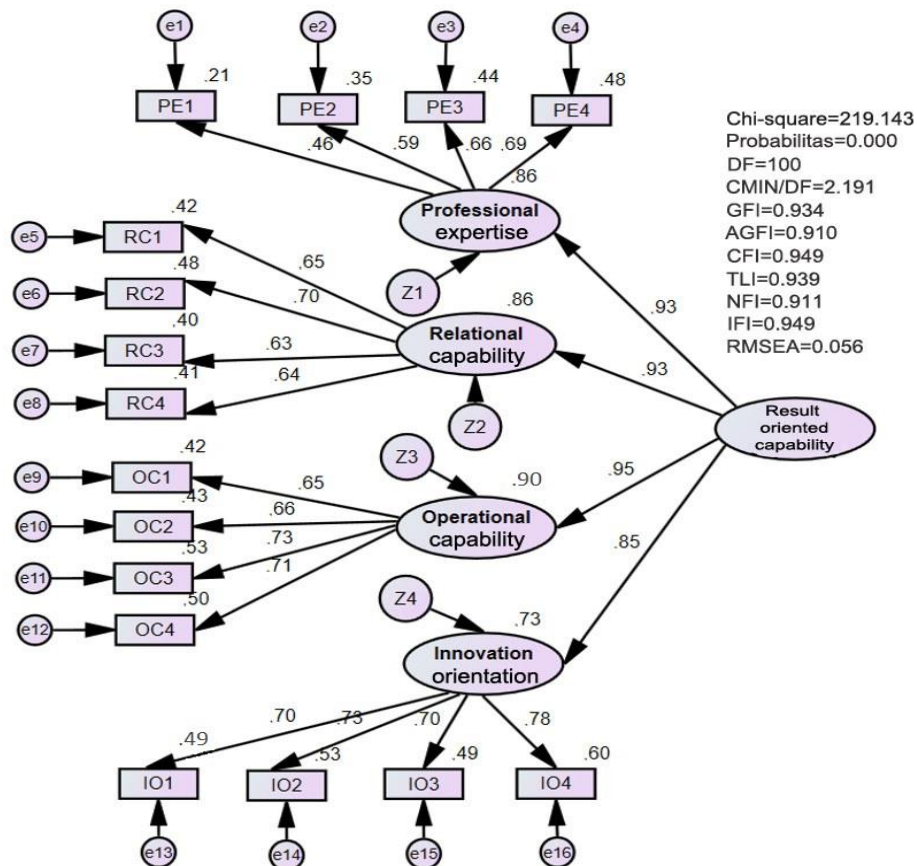


Figure 2.
Second order confirmatory factor analysis model result.

Table 9.
Final Confirmatory factor analysis results for the constructs.

Dimensions	Items	Items loading (Standardized)	T-value	Composite reliability
Professional expertise	PE1	0.46	1 ^a	0.73
	PE2	0.59	7.471 ^b	
	PE3	0.66	7.876 ^b	
	PE4	0.69	8.013 ^b	
Relational capability	RC1	0.65	10.486 ^b	0.731
	RC2	0.70	11.103 ^b	
	RC3	0.63	10.299 ^b	
	RC4	0.64	1 ^a	
Operational capability	OC1	0.65	11.53 ^b	0.78
	OC2	0.66	11.75 ^b	
	OC3	0.73	12.951 ^b	
	OC4	0.71	1 ^a	
Innovation orientation	IO1	0.70	13.287 ^b	0.82
	IO2	0.73	13.898 ^b	
	IO3	0.70	13.264 ^b	
	IO4	0.78	1 ^a	

Note: ^a Fixed at 1.0 for estimation purpose.

^b Standardized estimated factor loading significant at $p < 0.05$.

Table 10.
Second order composite reliability and convergent validity.

Variable	Dimensions	Loadings	CR	AVE
Result oriented capability	Professional expertise	0.929	0.94	0.80
	Relational capability	0.929		
	Operational capability	0.946		
	Innovation orientation	0.853		

6. Conclusion

This paper identified, modeled and tested result-oriented capability dimensions based on the experiences and

responses of Indonesian professional workers and a 20-item result-oriented capability scale has emerged. The dimensions and measures of the developed result-oriented capability are consistent with previous research on professional worker capability [10, 25, 32, 64]. We contribute to the literature on professional workers by proposing, testing and validating four distinguishable dimensions and measures that provide a better understanding of the professional worker's capability. The study's findings provide important insights into how to improve professional workers' capabilities. The new measures can be used as diagnostic tools for professional worker recruitment, assessment and training which is beneficial for professional workers but has larger implications for people management, training and development and organizational success. Future researchers should further validate result-oriented capability constructs and improve measurement validity and reliability. First, research is needed to determine how result-oriented capability constructs are related to other well-known constructs. For instance, consider the relationship between result-oriented capability and job engagement or performance. The investigation result can serve as verification and validation since the correlation between capability and job engagement or performance is already well known in certain established theories, i.e., the Job Characteristic Theory [65, 66] and the Job Demands-Resources (JD-R) Model [67, 68]. Secondly, the measurement could be further refined through a qualitative study such as by interviewing professional workers. Finally, future studies can be carried out on other industries to further test our measures and build generalizations across industries.

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