원 저

An identification of determinants to the development of intrapreneurial intention in small & medium sized local hospital in South Korea

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〈Abstract〉

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Purpose: The present study identified the determinants in the development of intrapreneurial intention in small and medium-sized local hospitals. A careful literature review led to the development of a conceptual model which identified two types of employee competence—individual competence and managerial competence—to influence intrapreneurial orientation positively. It was hypothesized that intrapreneurial orientation predicts intrapreneurial intention and is mediated by intrapreneurial commitment.

Methodology/Approach: The target population was chosen from two medical institutions of 'D' Hospital and 'E' Geriatric Hospital in Changwon City, South Korea. Samples were collected from 299 respondents who completed a structured questionnaire.

Findings: The results from a structural equation modeling statistical analysis indicated that (1) individual competence and managerial competence positively and significantly predict intrapreneurial orientation, (2) intrapreneurial orientation positively and significantly influences intrapreneurial intention, (3) intrapreneurial commitment partially mediates the relation of intrapreneurial orientation to intrapreneurial intention, and (4) the mediation effect of intrapreneurial commitment was significant in the medical-personnel group, but not in the non-medical group.

Practical Implications: Overall findings from the present work provide vital insights into understanding the preconditions for developing employee intrapreneurship in small and medium-sized local hospitals.

Keywords: intrapreneurial intention, intrapreneurial orientation, intrapreneurial commitment, managerial competence, individual competence, small hospital, medium-sized hospital

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Ⅰ. INTRODUCTION

1. Research Background

The managerial crisis in healthcare domains is now evident in South Korea, particularly in small and medium-sized local hospital institutions across the country. The current social health insurance system covering the entire population in the country leads to less cost for patients with severe medical conditions. Consequently, patients tend to visit general or third-class hospitals located in metropolitan areas. In contrast, most patients who visit local hospitals suffer from mild cases or need only preservative treatment. Therefore, salient managerial problems in local hospitals include a considerable imbalance of profitability and loss, shortage of patients, limited funds, and an increase in fiscal stress. Furthermore, medical and nursing staff's avoidance or reluctance to work at local hospitals adds to hospital management detriment. In addition, the hospital industry is now facing a recession due to the drastic change in the business environment as a result of the COVID-19 pandemic from 2020 to 2022. It appears that the managerial challenges of small and medium-sized hospitals are more serious than those of general or third-class hospitals. According to South Korea's Ministry of Health and Welfare report[1], the total number of hospitals in the nation increased from 2,152 in 2008 to 3,718 in 2020, growing at an average annual rate of 5.3%. An intriguing result from the report indicates that the top five hospitals account for 6.23% of South Korea's total medical expenses, implying that local hospitals' current medical delivery system is highly vulnerable to collapse. The structural and organizational problems faced by small and medium-sized hospitals in Korea are also manifested in various aspects such as human resources, finances, facilities, organizational culture, and legal regulations, and these can negatively impact the operation of hospitals and patients. In the context of medical competition, small and medium-sized local hospital organizations should thus try to find new ways to improve their performance and survive in the healthcare market[2].

Importantly, intrapreneurship has attracted among healthcare researchers. For example, Cates[3] and Letie[4] asserted that it is desirable to call for creative and innovative strategies through an intrapreneurial approach to improve healthcare outcomes. A basic tenet is that healthcare institutions can improve their performance, sustainability, and growth when coupled with intrapreneurial activity. Intrapreneurship denotes entrepreneurial work performed by employees within an existing workplace without starting new businesses[5]. Borrowing from a definition by Manion[6], the present study operationalizes intrapreneurship in healthcare domains as the application of entrepreneurial principles, behaviors, or initiatives within healthcare organizations by introducing an innovative or proactive service.

Concerning the observed pattern in the management of small and medium-sized local hospitals in South Korea, researchers found a considerable absence of intrapreneurial activity in the form of lacking motivation or interest, low ownership, and individual perception of a highly bureaucratic organizational structure. Furthermore, there seems to be a lack or minimal understanding of the necessity of intrapreneurial practice for medical and non-medical staff at local hospitals.

2. Research Objective

Intrapreneurial intention or decision initiative to behave entrepreneurially as an employee is predictive of successful intrapreneurship adoption in the

literature[7]. On the contrary, organizations that fail to promote and encourage intrapreneurial intention will likely lose distinctive competencies. In this light, the present study argues that possession of intrapreneurial intention at the individual level is of strategic importance to small and medium-sized local hospitals to achieve the goal of securing a competitive position and organizational survival. It may be thus essential to identify the formation of intrapreneurial intention by examining preconditions toward its development process. However, there is surprisingly limited empirical documentation of intrapreneurial intention and the factors that impact the intention, particularly in the healthcare domain[8]. In this respect, the present work developed and validated a conceptual model where we looked at two types of employee competencies—individual and managerial—to evaluate the influence of intrapreneurial intention on intrapreneurial orientation and intrapreneurial commitment.

Ⅱ. LITERATURE REVIEW AND DEVELOPMENT OF HYPOTHESIS

1. Challenge of Small and Medium-Sized Local Hospitals in South Korea

According to a survey conducted by South Korea's Anti-Corruption and Civil Rights Commission[9], 44% of the 72,375 respondents indicated that the biggest challenge in South Korea's healthcare system is the imbalance in health care delivery between metropolitan and local regions. South Korea has often ignored consideration for small and medium-sized local hospitals under the current medical system, which has lasted more than 40 years since the launch of the National Health Insurance Act in 1977. The result led to a ' credit toward a major or general hospital' as it is today, which brought a crisis to the medical delivery system. More than one in ten small and medium-sized local hospitals collapsed and suffered from deficits due to local hospitals' passive treatment and bleeding competition. After the launch of the regulation of 'separation of prescribing and dispensing' in 2000, local hospitals began to deteriorate[10]. For example, patients flocked to third-class medical institutions of top-class general hospitals instead of visiting the primary or secondary medical institutions of local hospitals.

The healthcare marketplace is maturing, and now it is saturated in South Korea. New services are launching regularly and changing rapidly. One may argue that poor adaptation to the rapidly evolving medical service market and negligence in providing diversified medical service for patients have deteriorated local hospital systems. Hence it is important to for medical institutions to adopt intrapreneurship as a tool of gaining patient satisfaction, competitive advantage, and quality of medical service[11]. However, South Korea has not widely implemented structuring and managing intrapreneurship in local hospitals as a managerial strategy.

2. Intrapreneurship and its Implication in Healthcare Domains

Intrapreneurship refers to an employee's entrepreneurial initiative or effort within a company or organization[5]. Past literature indicates that an intrapreneur employee highly tends to take risks to solve a given challenge or problem, capture new business opportunities, precipitate change, and improve the firm's performance with limited management involvement [12].

Notably, healthcare domains treat intrapreneurship as innovation in health service delivery processes, clinical technologies, and techniques that improve healthcare outcomes, patient experience, and administrative efficiency[13]. For example, Lesie[4] argued that embracing an intrapreneurship culture within a hospital organization helps its members actively adopt and recognize risk and work as a team to address challenges. Likewise, Marques et al.[14] indicated that possession of intrapreneurship is proximal to the survival of health service organizations. They further asserted the importance of understanding how employees behave in intrapreneurship and that organizations should promote intrapreneurial behavior.

3. Intrapreneurial Orientation

Intrapreneurial orientation is an employee's tendency to behave in an intrapreneurial fashion within the existing organization[15][16]. At the employee level, a culture or philosophy representing the strategic orientation for creating competitive advantage by responding to marketplace needs characterizes intrapreneurial orientation[17]. Intrapreneurial orientation is a crucial factor in securing a competitive position and promoting intrapreneurial activity for organizations. A basic tenet is that an employee with a greater or lesser intrapreneurial orientation is more or less likely to transform market opportunities quickly and efficiently into innovation, respectively. An organization with an intrapreneurial climate encourages its employees to implement innovative ideas. Hence, these organizations have an intrapreneurial orientation[18].

Although past studies elaborated several types of instrumental components of an intrapreneurial orientation construct[19], three are three widely accepted underlying dimensions: proactiveness, risk-taking, and innovativeness[20]. Proactiveness reflects an employee's initiative by predicting new opportunities in a forward-looking manner[21]. Risk-taking is the extent to which an employee is willing to tolerate uncertainty and make risky commitments[22]. Finally, innovativeness includes the creative efforts of an organizational member to capture new opportunities and find novel solutions. Therefore, an employee with a high level of intrapreneurial orientation tends to be proactively prepared for the future, take risks, and pursue innovative practices that bring new market opportunities[23].

The resource-based view[24] provides a framework to assess the strategic resources that an organization can exploit to gain a long-term competitive advantage. The core idea of the theory is that valuable, inimitable, and non-substitutable resources obtained and developed by the organization determine its performance[25]. The theory further hypothesizes that an organization is a collection of organizational competencies. Therefore, the resource-based view is an approach to look for unique capabilities internally to achieve the organization's superior performance by effectively using its resources[26]. In the present work, we expect two types of employee competencies, individual and managerial, to influence intrapreneurial orientation in hospital organizations positively. Individual competence is the degree to which an employee knows and controls themself in a certain area[27]. Sijde et al.[28] indicated that intrapreneurship is boosted by individual competence, as it provides familiarity with the organization's vision. Managerial competence denotes an employee's ability to plan, monitor, and control an organization's operations[29]. Thus, intrapreneurial orientation is an orientation strategy that is also part of personal resources[30]. One can argue then

that an employee's orientation may be shaped by their individual and managerial competencies, as these are abilities to operate and utilize the resources[31]. The present work formulates the following two research hypotheses.

H_1: Individual competence will positively affect intrapreneurial orientation.

H_2: Managerial competence will positively affect intrapreneurial orientation.

4. Intrapreneurial Intention

Intrapreneurial intention reflects an employee's motivation to engage in specific activities, including developing innovative projects or self-motivated effortful thinking to improve organizational performance[32]. Intrapreneurship or intrapreneurial action should be highly intentional, as the behavior is unusual and performed by choice and not accidentally [33].

There is well-documented literature that behavioral intention formation depends on one's attitude, belief, personal trait, or context-specific perception of the behavior[33]. An intrapreneurial intention is an employee's strength or willingness to perform an intrapreneurial activity[34], predicted by their perceived intrapreneurial orientation. Antoncic & Hisrich[5] argued that intrapreneurship occurs in strategic orientations adopted by organizations and entrepreneurial activities carried out by individual employees. Marques et al.[14] insisted that employees' traits, including intrapreneurial orientation, should be considered determinants of behavioral intention in intrapreneurship.

Much empirical evidence supports the hypothetical relation of entrepreneurial orientation to entrepreneurial intention. However, studies are not clear about whether the orientation positively impacts intrapreneurial intention at the individual level. Therefore, the present study hypothesized that the stronger an employee's intrapreneurial orientation, the more likely they will exhibit intrapreneurial intention.

H_3: Intrapreneurial orientation will positively affect intrapreneurial intention.

5. Intrapreneurial Commitment

This study tests the mediating role of intrapreneurial commitment in the effect of intrapreneurial orientation on intrapreneurial intention. A wide variety of research domains extensively studied the notion of commitment. It often refers to an individual's emotional and psychological involvement in a particular target through the sense of belonging [35]. In entrepreneurial studies, the term mainly applies to affective (desire-based), normative (obligation-based), and behavioral (opportunity-based) energy in creating new business activities and achieving success[36]. Related to the role of commitment in entrepre- neurship, Murnieks et al.[37] indicated that it is a key predictor of encompassing barriers and successfully achieving the business venture. Using the theory of entrepreneurial continuance logic, Datta et al.[38] posited that entrepreneurial commitment guides entrepreneurial intention in keeping businesses running.

The present study draws from past literature on entrepreneurial commitment and defines intrapreneurial commitment as the willingness to exert considerable effort on intrapreneurial activity. Strong intrapreneurial commitment may boost employees' orientation to scan the internal and external environment and pursue opportunities beyond their resources [5]. Building on the discussion, we can position the commitment as a mediator of the relationship between intrapreneurial orientation and intention. The present work tests the research hypothesis as below:

H_4: Intrapreneurial commitment will mediate the influence of intrapreneurial orientation on intrapreneurial intention.

6. The Conceptual Model

The conceptual model underlying the present study is presented in Figure 1.

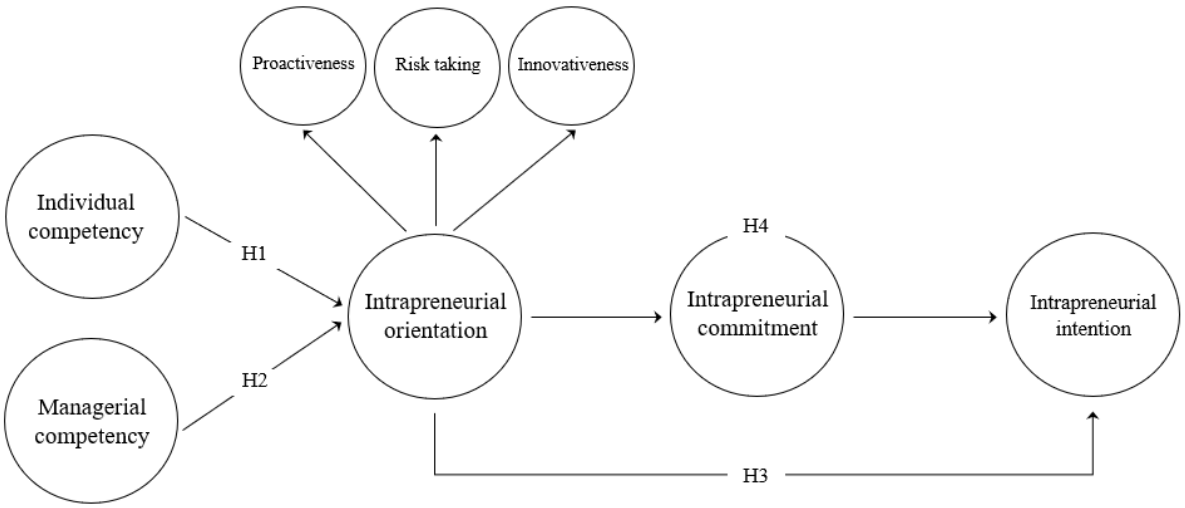
Ⅲ. RESEARCH METHODOLOGY

1. Target Sample Population

The present work surveyed medical- and non-medical employees working at two medical institutions of 'D' Hospital and 'E' Geriatric Hospital located in Changwon, South Korea. Established in 1983, 'D' Hospital developed into a surgery-specific healthcare organization and grew into one of the largest hospitals in the city by the late 1990s. In 2000, however, the city observed signs of deterioration in hospital management because the new nursing grade system and separation of prescription and dispensing increased the hospital's revenue losses. In addition, the construction of high-speed rail resulted in the movement of profitable patients suffering from severe diseases in the city to metropolitan hospitals. The EAC Changwon Geriatric Hospital offers 24-hour skilled nursing care services for the aged on an in-resident basis. But inefficient management was one of the main factors in the challenges of collaboration between nursing homes and the hospital system.

2. Development of Measurement Instrument

The measurement instrument developed in the present work consists of two sections. The first section asked questions about the respondents' demographic profiles, including age, gender, marital status, education level, and medical or non-medical personnel classification. The second section involved seven-point Likert scaled items to measure five study variables (i.e., 1=*'strongly disagree'* to 7=*'strongly agree'*). We adapted all measurement items from several past studies and carefully modified them to reflect the characteristics of intrapreneurship in a healthcare context. We assessed the construct of individual



[Figure 1] The Conceptual Model

competence on four items based on Otoo's[39] work. We evaluated managerial competence by the mean of eight items approached by Bosch et al.[40]. We also adapted five measurement items from Hu & Yuan's[41] work to assess intrapreneurial commitment. We measured the second-order construct of intrapreneurial orientation with three first-order constructs of proactiveness, risk-taking propensity, and innovativeness, each with six measurement items modified from Matsuno et al.[42]. Finally, we measured intrapreneurial intention with eight items derived from two recent works by Farrukh et al.[36] and Martins & Perez[43]. The authors translated all materials to Korean.

Before the main study, we carried out a small-scale pilot study with four employees working for the hospital. The purpose was to evaluate the feasibility, appropriateness, clarity of questionnaire items, and the thoroughness of survey materials. After obtaining open-ended feedback, we modified several items in wording, maintaining their original meaning. We did not include the data from the pilot study in the final analysis.

3. Sampling Procedure and Respondents

We chose the target respondents from a non-random convenience sample of 358 individuals working for the 'D' and 'E' hospitals in South Korea. A survey was conducted January 24th through Feburary 26th, 2021. We set the sample size to N=300 respondents as a minimum for final analysis. We assured respondents of their confidentiality in the study and informed them that we would not release or publish any identifying information. Of the returned questionnaire, we judged 59 surveys to have incomplete or insincere

<Table 1> Demographic profiles of N=299 respondents

Demographic characteristics	Frequency	Percentage (%)
Gender		
Male	49	16.4
Female	250	83.6
Marital status		
Married	175	58.5
Not married	124	41.5
Age		
20s	83	27.8
30s	88	29.4
40s	76	25.4
50s	46	15.4
Over 60s	6	2.0
Educational level		
High school	48	16.1
College	121	40.5
Undergraduate	119	39.8
Graduate (Master)	9	3.0
Graduate (Ph.D.)	2	7
Medical/Non-medical group		
Medical personnel	149	49.8
Non-medical personnel	150	50.2
Total	N=299	100.0%

responses and discarded them from further analysis, yielding a response rate of 83.5%. Respondents in the final sample had an average age of 38.2 years (SD=10.36). They consisted of 49 males (16.4%) and 250 females (83.6%) (see Table 1). In the study, 49.8% of the respondents were medical personnel, and 50.2% were non-medical personnel, indicating a reasonably representative quota sample of medical and non-medical staff.

4. The Methodology of Statistical Analysis

A series of statistical analysis was performed in the present work as follows. The descriptive statistics of the mean and standard deviation were calculated for the measured constructs and items. Normality of the data collected was tested using Kolmogorov-Smirnov test at α =.05. Also, we substantiated the measurement instrument for the present study by a series of scale refinement processes[44]. We conducted a common method bias test to avoid issues in self-rated survey data[45]. An exploratory factor analysis (EFA) was performed to identify the underlying factorial structures of the measurement items. We then calculated Cronbach's alpha coefficient for assessing whether items of each construct consistently measure the same concept. We performed a confirmatory factor analysis to evaluate the construct validity of the structure of latent variables with obtained data set. Construct validity denotes the extent to which we can infer the conceptual or theoretical model from the collected data[46]. In the present work, we assessed construct validity by examining convergent validity and discriminant validity. The model fits of the measurement model and structural model were evaluated by calculation of several goodness-of-fit indices, including the chi-square statistic (χ^2), normed fit index (NFI), comparative fit index (CFI), incremental fit index (IFI), Tucker-Lewis index (TLI), and the root mean error of approximation (RMSEA). A multi-group analysis was conducted on two dample groups of medical personnel and non-medical personnel.

Ⅳ. RESULTS OF THE STUDY

We used statistical packages IBM SPSS 24.0 and IBM AMOS 24.0 for data analysis, as appropriate. We followed the scale validation from sample data with confirmatory factor analysis and a series of hypotheses tests.

1. Descriptive Statistics

Table 2 presents the descriptive statistics of the mean and standard deviation for the measured constructs and items. We obtained the lowest mean in proactiveness (3.02) among the seven study variables, while the highest mean was for intrapreneurial commitment (3.50). The results from conducting the Kolmogorov-Smirnov test reveal that the values for the all study constructs comply a normal distribution(p>0.05 for all cases). Therefore, we determined that the survey data collected for seven constructs did not violate normality and was suitable for performing structural equation model analysis using maximum likelihood estimation methods[47].

2. Scale Validation

1) Common Method Bias

We used Harman's single-factor analysis to evaluate common method bias[48]. It means the method-specific variance shared between dependent and independent variables measured in the same

Table 2. Descriptive statistics for item measures

Construct	Item	Mean (S.D.)
Individual Competency *M*=3.45 (0.627)	IC1	3.56 (0.607)
	IC2	3.46 (0.635)
	IC3	3.33 (0.625)
	IC4	3.40 (0.629)
	IC5	3.48 (0.620)
Managerial Competency *M*=3.32 (0.742)	MC1	3.37 (0.760)
	MC2	3.27 (0.740)
	MC3	3.33 (0.738)
	MC4	3.12 (0.753)
	MC5	3.29 (0.694)
	MC6	3.39 (0.699)
	MC7	3.44 (0.750)
	MC8	3.32 (0.762)
Proactiveness *M*=3.02 (0.814)	PROAC1	2.92 (0.796)
	PROAC2	3.22 (0.807)
	PROAC3	2.75 (0.777)
	PROAC4	2.96 (0.789)
	PROAC5	3.20 (0.849)
	PROAC6	3.05 (0.773)
Risk taking *M*=3.33 (0.712)	RISKTNG1	3.35 (0.676)
	RISKTNG2	3.26 (0.724)
	RISKTNG3	3.63 (0.722)
	RISKTNG4	3.26 (0.673)
	RISKTNG5	3.26 (0.703)
	RISKTNG6	3.24 (0.698)
Innovativeness *M*=3.03 (0.753)	INNOV1	3.11 (0.800)
	INNOV2	3.00 (0.737)
	INNOV3	3.09 (0.725)
	INNOV4	2.99 (0.777)
	INNOV5	3.07 (0.711)
	INNOV6	2.95 (0.760)
Intrapreneurial Commitment *M*=3.50 (0.716)	COMMIT1	3.42 (0.702)
	COMMIT2	3.62 (0.656)
	COMMIT3	3.43 (0.703)
	COMMIT4	3.26 (0.763)
	COMMIT5	3.64 (0.683)
	COMMIT6	3.62 (0.707)
Intrapreneurial Intention *M*=3.04 (0.760)	INT1	3.08 (0.690)
	INT2	3.15 (0.674)
	INT3	3.12 (0.730)
	INT4	3.14 (0.735)
	INT5	2.91 (0.737)
	INT6	3.16 (0.873)
	INT7	2.73 (0.776)
	INT8	3.04 (0.682)

way by the same respondents[49]. The principal component analysis result indicates that the maximum variance explained by a single factor was 39.469%, which is less than 50% (Table 3). Thus, common method bias was not a serious threat in the present study[48].

[Insert Table 3 about here]

2) Exploratory Factor Analysis

The calculation of the KMO measure of sampling adequacy (0.944) and Bartlett's test of sphericity ($\chi^2(990)=10851.493$, $p=0.000$) allowed us to examine the appropriateness of factor analysis[50]. We performed an exploratory factor analysis on 45 items using varimax rotation with Kaiser normalization. We selected the principal component analysis for the extraction method. We extracted seven distinctive components with eigenvalues exceeding 1.0, corresponding to the seven constructs of interest in the present study. The seven components collectively accounted for 70.4% of the total variance of items[51]. Table 3 shows that most factor loadings exceed the recommended threshold of 0.5[52], with the exceptions of INT7 and INT8. We discarded these two items to obtain a better fit model.

3) Internal Consistency

We assessed internal consistency to ensure the items' cohesion for their respective constructs. The values of Cronbach's alpha coefficients computed for all cases ranged from 0.823 to 0.945, which exceeded the lower cut-off of 0.7[53] (Table 3).

3. Confirmatory Factor Analysis

1) Convergent Validity

Convergent validity reflects the degree to which the same or similar constructs capture a single

Table 3. The result of the exploratory factor analysis (EFA)

Items	Component						
	1	2	3	4	5	6	7
IC1	.136	.160	.135	.269	.728	.183	.047
IC2	.149	.155	.167	.164	.858	.115	.072
IC3	.077	.142	.253	.141	.802	.149	.141
IC4	.217	.241	.170	.251	.680	.121	.164
IC5	.296	.140	.172	.248	.703	.169	.117
MC1	.704	.200	.128	.312	.120	−.012	−.004
MC2	.779	.142	.183	.218	.075	.089	.087
MC3	.806	.121	.091	.150	.134	.147	.110
MC4	.731	.149	.223	.041	.115	−.009	−.007
MC5	.791	.072	.075	.163	.106	.140	.109
MC6	.806	.092	.067	.135	.113	.134	.222
MC7	.787	−.024	.099	.167	.171	.105	.155
MC8	.858	.103	.104	.187	.036	.058	.066
PROAC1	.183	.194	.764	.125	.127	.173	.108
PROAC2	.175	.071	.762	.182	.176	.259	.086
PROAC3	.051	.164	.770	−.032	.125	.076	.067
PROAC4	.175	.150	.830	.112	.117	.204	.130
PROAC5	.173	.011	.765	.153	.132	.279	.040
PROAC6	.159	.079	.690	.155	.191	.260	.095
RISKTNG1	.184	.241	.298	.198	.093	.632	.193
RISKTNG2	.175	.263	.423	.180	.125	.583	.172
RISKTNG3	.085	.200	.075	.078	.176	.693	.010
RISKTNG4	.043	.244	.248	.071	.166	.690	.031
RISKTNG5	.157	.216	.334	.087	.126	.643	.096
RISKTNG6	.084	.287	.348	.128	.109	.622	.161
INNOV1	.102	.796	.128	.235	.154	.256	.098
INNOV2	.112	.803	.179	.184	.111	.184	.121
INNOV3	.121	.792	.059	.189	.158	.237	.096
INNOV4	.124	.763	.151	.180	.109	.251	.202
INNOV5	.237	.702	.175	.168	.139	.191	.270
INNOV6	.148	.823	.114	.098	.215	.238	.187
COMMIT1	.213	.215	.114	.755	.234	.082	.114
COMMIT2	.233	−.010	.054	.691	.336	.192	.105
COMMIT3	.281	.110	.204	.705	.159	.059	.070
COMMIT4	.350	.237	.283	.650	.109	.088	.149
COMMIT5	.164	.187	.019	.782	.139	.169	−.011
COMMIT6	.261	.256	.011	.733	.199	.157	.041
INT1	.260	.347	.293	.181	.121	.170	.528
INT2	.182	.128	.189	.211	.164	.231	.649
INT3	.186	.260	.252	.529	.134	.054	.503
INT4	.145	.192	.207	.543	.067	.123	.537
INT5	.342	.338	.258	.280	.106	.014	.542
INT6	.069	.226	−.142	−.229	.163	.184	.545
INT7*	.143	.354	.342	.343	−.008	−.181	.431
INT8*	.051	.292	.314	.397	.154	−.146	.338
Eigen Value	17.761	3.830	2.919	2.405	2.088	1.541	1.151
% Variance	39.469	8.511	6.486	5.344	4.640	3.426	2.559
Cronbach's alpha coefficient	0.938	0.945	0.923	0.914	0.915	0.885	0.823

Note. Exploratory factor analysis technique: principal component analysis; Rotation method: Varimax with Kaiser Normalization; Rotation converged in 9 iterations.

IC=individual competency; MC=managerial competency; PROAC=proactiveness; RISKTNG=Risk taking; INNOV=innovativeness; COMMIT=intrapreneurial commitment; INT=intrapreneurial intention

The values in shade represent the item loading exceeding 0.5 threshold of factor loading.

*Items discarded in the final analysis

common construct[54]. For satisfactory convergent validity, (1) the standardized factor loading calculated for each of the items should be greater than 0.6 at the significance level of $p < 0.05$, (2) the average variance extracted (AVE) for each of the constructs should be greater than 0.5, and (3) composite reliability should be greater than 0.7[55]. As illustrated in Table 4, most standardized loading values exceeded the 0.6 minimum cut-off at $p < 0.05$. We determined item INT6 with a factor loading of 0.236 to be unacceptable and eliminated it from further analysis. The values of AVE and compositive reliability calculated for the seven constructs had a range of 0.585 (intrapreneurial intention) to 0.687 (individual competency) and 0.837 proactiveness) to 0.939 (managerial competency), respectively. Based on the results, we determined the convergent validity of the measurement model to be adequate.

2) Nomological Validity

We evaluated the nomological validity of the second-order construct of intrapreneurial orientation with an inspection of standardized factor loadings

Table 4. The result of the confirmatory factor analysis

Second-order Construct	First-order Construct	Item	Standardized factor loading	Average variance extracted	Composite reliability
Intrapreneurial orientation	Individual competency	IC1	0.791	0.687	0.916
		IC2	0.895		
		IC3	0.844		
		IC4	0.788		
		IC5	0.823		
	Managerial competency	MC1	0.758	0.658	0.939
		MC2	0.824		
		MC3	0.844		
		MC4	0.706		
		MC5	0.809		
		MC6	0.845		
		MC7	0.815		
		MC8	0.874		
	Proactiveness		0.744	0.632	0.837
		PROAC1	0.821		
		PROAC2	0.869		
		PROAC3	0.677		
		PROAC4	0.903		
		PROAC5	0.840		
		PROAC6	0.794		
	Risk taking		0.875		
		RISKTNG1	0.789		
		RISKTNG2	0.834		
		RISKTNG3	0.600		
		RISKTNG4	0.720		
		RISKTNG5	0.752		
		RISKTNG6	0.789		

Second-order Construct	First-order Construct	Item	Standardized factor loading	Average variance extracted	Composite reliability
			0.758		
		INNOV1	0.878		
		INNOV2	0.859		
	Innovativeness	INNOV3	0.844		
		INNOV4	0.855		
		INNOV5	0.821		
		INNOV6	0.916		
		COMMIT1	0.838	0.642	0.915
		COMMIT2	0.771		
	Intrapreneurial commitment	COMMIT3	0.774		
		COMMIT4	0.813		
		COMMIT5	0.782		
		COMMIT6	0.826		
		INT1	0.707	0.585	0.874
		INT2	0.663		
	Intrapreneurial intention	INT3	0.861		
		INT4	0.824		
		INT5	0.754		
		INT6*	0.236		

Note. * Item discarded in the final analysis

of proactiveness (0.744), risk-taking (0.875), and innovativeness (0.758), exhibiting all loading values greater than 0.6 at $p < 0.05$ for all cases[56]. We thus concluded that the formative measure of intrapreneurial orientation was by three first-order constructs of proactiveness, risk-taking, and innovativeness.

3) Discriminant Validity

We assessed discriminant validity using Fornell & Larcker[55] by comparing the square root of the value of AVE for each construct and the corresponding estimated inter-construct correlations. As seen in Table 5, provided by AMOS 24.0 output, diagonal values of the square root of the AVE are all greater than estimated correlations between the

Table 5. The comparison of the square root of average variance extracted and estimated correlations among constructs

Constructs	Average variance extracted	Construct				
		1	2	3	4	5
1	0.687	**0.829**				
2	0.658	0.450	**0.811**			
3	0.632	0.655	0.522	**0.795**		
4	0.642	0.604	0.591	0.628	**0.801**	
5	0.585	0.552	0.564	0.756	0.751	**0.765**

Note. 1=Individual competency; 2=Managerial competency; 3=Intrapreneurial orientation; 4=Intrapreneurial commitment; 5=Intrapreneurial intention. The value in bold represents the square root of average variance extracted.

construct and all others across all cases. The results demonstrated discriminant validity that multiple measures of a construct in the present work are less related to measures of other constructs[57].

4) Model Fit

Table 6 indicates that all the values of fit indices pointed to acceptable model-data fits for each model. Thus, we judged the present study's measurement and structural models to fit the collected survey data.

4. Hypothesis Test: Structural Paths of Hypotheses 1, 2, 3

To support the current study's hypotheses (H_1, H_2, and H_3), we examined the sign, standardized beta coefficients, and statistical significance of the values of the critical ratio. Table 7 lists a summary of the results of testing for each hypothesis. We hypothesized that individual competency would significantly and positively impact intrapreneurial orientation. Consistent with the prediction, we found the influence of individual competency on intrapreneurial orientation significant at $p < 0.001$ with $\beta = 0.534$. Managerial competency also emerged as a significant predictor of intrapreneurial orientation with $\beta = 0.369$ ($p < 0.001$). We also found intrapreneurial orientation significantly predictive of intrapreneurial intention with $\beta = 0.556$ ($p < 0.001$). Collectively, we found support for all three research hypotheses with a statistical significance level of $p < 0.001$.

5. Hypothesis Test: Mediation Effect of Hypothesis 4

We tested the mediation effect of intrapreneurial commitment by performing bootstrapping in AMOS 24 on N=5,000[61]. The results indicated a statistical significance of the indirect effect of intrapreneurial orientation on intrapreneurial intention (p=0.017<0.05 with $\beta = 0.253$). Comparing the beta coefficient of the direct effect of intrapreneurial orientation ($\beta = 0.556$, p < 0.001), the result revealed that intrapreneurial commitment partially mediated the influence of intrapreneurial orientation on intrapreneurial intention.

Figure 2 illustrates the results of the structural equation model analysis for the test of research

Table 6. The calculated model-fit indices for the measurement model and the structural model

Model	x^2/df	NFI	CFI	IFI	TLI	RMSEA
Measurement model	2.004	0.852	0.919	0.920	0.914	0.058
Structural model	2.051	0.847	0.915	0.916	0.910	0.059
Recommended values	≤ 3.0[1]	≥ 0.9[2]	≥ 0.9[3]	≥ 0.9[3]	≥ 0.9[4]	≤ .08[3]

[1] Gefen et al.[58]
[2] Bentler & Bonett[59]
[3] Hair et al.[50]
[4] Browne & Cudeck[60]

Table 7. Test results of research hypotheses: Hypotheses 1, 2, & 3

Research hypotheses	Standardized beta	Critical ratio
H1. Individual competency → Intrapreneurial orientation	0.534	8.157***
H2. Managerial competency → Intrapreneurial orientation	0.369	6.300***
H3. Intrapreneurial orientation → Intrapreneurial intention	0.556	6.525***

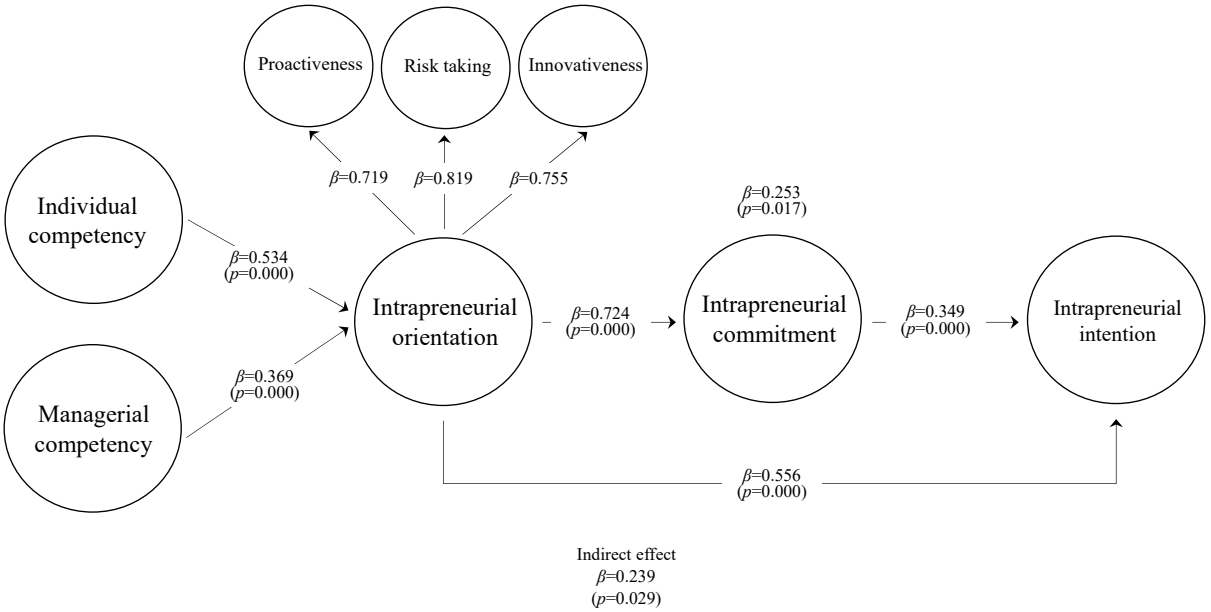


Figure 2. Results of the structural equation model analysis for the test of research hypotheses 1 to 4

hypothesis 1, 2, 3, and 4.

6. Multiple-Group Analysis: A Comparison of Medical and Non-Medical Personnel

We performed a multi-group analysis on two sample groups of medical personnel (N_1=149) and non-medical personnel (N_2=151). The purpose was to explore further whether the patterns of hypothesis testing vary by the two respondent groups. The present work used a common way of comparing the significance difference of χ^2 statistics in the unconstrained model and the structural weight constrained model across two groups. Table 8 summarizes the equivalence test results with χ^2 statistics in comparing the unconstrained and structural weight model. The change in the degree of freedom between the unconstrained model (df=1,620) and structural weight model (df=1,704) equals Δdf=84, and $\chi^2(84)$ at the 95% confidence level yields 106.39. Now, the calculated difference of χ^2 statistics between the unconstrained model (χ^2=2,946.528) and structural weight model (χ^2=3,204.771) is $\Delta\chi^2$=258.243, which exceeds $\chi^2(84)$=106.39. Thus, our results ensured the cross-reliability for performing the multi-group analysis[62].

Table 9 compares the test results for three research hypotheses between the medical and non-medical personnel groups. For both the medical and non-medical groups, we found support for all hypotheses at a significance level of $p < 0.001$.

We calculated the differences of the values of critical ratio across the two groups to assess whether the medical and non-medical groups

Table 8. Results of the test of equality constrained model: A comparison of unconstrained model and structural weight model

Model	NPAR	χ^2	df	p-Value	χ^2/df
Unconstrained model	270	2946.528	1620	0.000	1.819
Structural weight model	186	3204.771	1704	0.000	1.881

Table 9. The Comparison of the test result of research hypotheses between medical- and non-medical personnel group

Research hypotheses	Medical personnel group (N_1=149)		Non-medical personnel group (N_2=150)	
	Standardized beta	Critical ratio	Standardized beta	Critical ratio
H1. Individual competency → Intrapreneurial orientation	0.505	5.211***	0.555	6.018***
H2. Managerial competency → Intrapreneurial orientation	0.364	4.314***	0.394	4.705***
H3. Intrapreneurial orientation → Intrapreneurial intention	0.351	3.302***	0.763	4.818***

Table 10. The difference of the calculated critical ratio between medical- and non-medical personnel group

Research hypotheses	Difference in critical ratio
H1. Individual competency → Intrapreneurial orientation	−0.807
H2. Managerial competency → Intrapreneurial orientation	−0.391
H3. Intrapreneurial orientation → Intrapreneurial intention	−1.516

Note. *** p<0.001

differ significantly from each other to support hypotheses testing[63] (Table 10). A typical rule is that if the absolute value of the critical ratio of pair-wise comparison between two groups is greater than the value of 1.960, then estimates in two structural pathways are significantly different from each other[64]. However, the results indicated that none of the absolute values for CR difference is greater than 1.960, implying that the observed patterns in the test results do not vary by two groups. Interestingly, we found the mediation effect of intrapreneurial commitment to be significant in the medical personnel group (β =0.295, p=0.025<0.05), but not the non-medical group (β =0.139, p=0.408>0.05).

Ⅴ. CONCLUSIONS AND IMPLICATIONS

Consistent with the prediction, we found individual and managerial competence positively and significantly predictive of intrapreneurial orientation for hospital employees. Previous research demonstrated that employee competence is a key indicator of one's excellence and job performance in the work environment[65]. In the healthcare sector, employees are the primary resource supporting the running of the medical services business. In the present work, we measured individual as the extent to which respondents possess capabilities to achieve their desired results. On the other hand, we assessed employees' managerial competence on their perceived competence in managing a particular area. Thus, the present study's results indicate that the individual's embedded competence in their ability integrated within the organization's structure is highly associated with creating a potential resource for supporting intrapreneurial decision-making and practice. The current health service marketplace in South Korea faces intensive competition for survival. Therefore, small and medium-sized local hospitals should increase their competencies and thus their competitiveness. Furthermore, given the specific nature of smaller hospitals in local cities, top management centralizes

decision-making on innovation adoption and implementation. However, employees' temperament and abilities also create intrapreneurial value for improving health service organizations.

In the present work, we found intrapreneurial orientation to be crucial in determining intrapreneurial intention. The result is in line with Antoncic & Hisrich's[5] claim that strategic direction leads to the development of intrapreneurship. Furthermore, within the past decade, there has been a significant shift in the management of general or third-class hospital institutions in South Korea. Many of these organizations adopted a business orientation. They now use such business functions as strategic planning, medical service marketing, and advertising. There is also increasing emphasis on intrapreneurship to initiate creative projects within the organization. Medical stakeholders and organizations are then ready to compete for the rapidly changing health service market and community. Thus far, however, small and medium-sized local hospitals have neglected to deploy relevant strategies to promote intrapreneurship. This lack of successful strategy might be because management does not understand the importance of active involvement in self-directed and risk-taking innovation in pursuing organizational success. In this context, hospitals should provide practical guidance through coaching or training to open hospital employees to situations that cultivate intrapreneurship.

The result from the current work revealed that intrapreneurial commitment mediates the influence of intrapreneurial orientation on intrapreneurial intention. We expected the observed pattern, as commitment should encourage employees to give extra effort in solving particular problems in an organization[66]. Higher intrapreneurial commitment may be desirable in medical and non-medical personnel in small and medium-sized local hospitals. However, the result of a multiple-group analysis indicates that the mediation effect of intrapreneurial commitment was only for medical personnel but not for non-medical personnel. Our findings may provide broad support for the definition of intrapreneurial commitment, operationalized as the willingness to make an effort in intrapreneurship with a sense of ownership. A plausible explanation for differences between groups is that the medical personnel group included medical doctors and nurses; therefore, that group is likely to exhibit higher loyalty and greater self-alignment to the hospital than the non-medical personnel group. Consequently, we could argue that the sense of ownership is the key to employee engagement in intrapreneurship[38].

Except for the mediating role of intrapreneurial commitment, the remaining results of the hypotheses test did not vary between the two groups. Therefore, intrapreneurial activity within a hospital organization should include medical staff such as physicians and nurses and non-medical staff such as administrative managers[67]. In general, medical physicians in South Korea tend not to perform innovative activities in their hospitals due to their bureaucratic mindset towards their patients and a view to the chairmanship of a clinical department. However, they should come up with and develop innovative ideas to improve the patient experience with increased quality care. In addition, non-medical hospital staff should endeavor to improve performance by identifying problems and testing or proposing solutions with collaboration across departments.

Most healthcare providers, particularly small and medium-sized local hospitals in South Korea, have a culture and structure that is more similar to public or non-profit organizations than commercial companies[68]. This environment may be because

the hospital's basis for existence is deeply grounded in the charitable missions of patient care[69]. However, the mission should be directed at a commercial objective as a priority for survival in a competitive marketplace. Therefore, the hospital owner or manager should be encouraged to take a serious interest in adopting and managing intrapreneurial activities as a means of competing and enhancing growth.

Small and medium-sized hospitals have several structural, financial, and human resource constraints compared to big hospitals. In order to overcome these constraints and achieve sustainable growth, it is necessary to strengthen the orientation of intrapreneurs. The open communication culture should be thus created within the organization through active communication, creating an environment where employees can freely propose and discuss new ideas. In addition, a climate should be created where employees are encouraged to try new challenges without fear of failure through the encouragement of risk-taking. In addition, a system that rewards intrapreneurial behavior should be introduced to motivate employees to participate in innovative activity.

We acknowledge that there are several limitations in the present work. First, this work utilized a self-rated survey study to collect construct measures. The reliance on a recall-based report might result in measurement bias. Thus, we recommend that future studies incorporate objective measures with a broader target sample of healthcare workers. Second, we did not employ the actual behavior of intrapreneurship in the follow-up study and only included behavioral intention in our conceptual framework. Therefore, we could not fully capture the predictive value of the intention-behavior paradigm. Future studies may provide a more detailed insight into the hypothesized relationship of intention-behavior by adopting a longitudinal approach. Lastly, the present work included the data set collected from only two hospitals in South Korea. Thus, this sample hardly enables us to generalize our research findings beyond the target sample. Future studies should use a broader selection and replicate our results to provide support for robust external validity.

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Appendix: Instrumental Measurement

Construct	Measurement items
individual competency	(1) 나는 중요한 상황에서는 일을 잘 하는 편이다. (2) 나는 능력이 있는 사람이다. (3) 나는 재능이 뛰어난 사람이다. (4) 나는 나에게 주어진 도전적인 상황을 잘 다루는 편이다. (5) 나는 역량을 가지고 있다.
managerial competency	(1) 나는 우리 병원이 가지는 강점을 알고 있다. (2) 나는 주어진 기회들을 활용하기 위해서 우리 병원의 환경을 분석한다. (3) 나는 우리 병원의 경영에 나쁜 영향을 미치는 요인들을 감지한다. (4) 업무를 조정하는 상황에서, 나는 받아들일 수 없는 사안을 양보하지 않는다. (5) 업무를 조정하는 상황에서, 나는 관계를 악화시키지 않고 상대방에게 양보를 얻어낼 수 있다. (6) 업무를 조정하는 상황에서 나는 상대방에게 나에 대한 신뢰감을 전달할 수 있다. (7) 나에게는 정보를 서로 공유하는 영향력 있는 주변 사람들이 있다. (8) 나는 업무 환경에서 핵심적인 역할을 담당하는 구성원들과 비공식적인 관계를 형성하기 위하여 노력한다.
intrapreneurial orientation: pro-activeness	(1) 나는 다른 사람들보다는 좋은 사업기회를 포착하는 편이다. (2) 나는 업무를 향상시킬 수 있는 방법을 항상 찾는 편이다. (3) 나는 다른 사람들이 반대를 하더라도 항상 내 생각을 옹호한다. (4) 어떠한 일이 벌어지기를 원한다면, 나는 그것을 가능하게 한다. (5) 나는 너무 늦지 않게 문제를 해결하는 편이다. (6) 나는 건설적으로 변화시킬 수 있는 힘이 있다.
intrapreneurial orientation: risk-taking propensity	(1) 나는 계획을 세울 때에는 실행이 가능한지를 먼저 염두한다. (2) 나는 업무를 선택할 때에 발생할 수 있는 리스크를 생각한다. (3) 나는 꾸준하게 수입을 얻을 수 있는 안정된 직장을 선호한다. (4) 나는 내가 이미 알고 있는 문제점을 가지는 업무를 선호한다. (5) 나는 어떠한 업무에서 드러나는 리스크는 반드시 피해야 한다고 생각한다. (6) 나는 업무와 관련된 의사결정을 수행할 때에는 편안한 느낌을 가진다.
intrapreneurial orientation: innovativeness	(1) 나는 새로운 기술이나 과정, 기법을 탐색하는 것을 즐긴다. (2) 나는 창의적인 아이디어를 내는 편이다. (3) 나는 새로운 생각을 다른 사람들에게 전달하는 편이다. (4) 나는 새로운 아이디어를 실현시키기 위하여 필요한 자금을 세이브하는 편이다. (5) 나는 새로운 아이디어를 구현하기 위해서 요구되는 적절한 계획을 만드는 편이다. (6) 나는 모험을 추구하는 편이다.
intrapreneurial commitment	(1) 나는 우리 병원을 위해서라면 노력을 아끼지 않는다. (2) 우리 병원은 사회적 책임과 협력이라는 목표를 향해 나아가야 한다고 생각한다. (3) 나는 나의 신념을 우리 병원에 근무하는 사람들과 공유할 수 있다. (4) 나는 내가 가지고 있는 생각을 우리 병원에서 실현시킬 수 있도록 노력한다. (5) 나는 우리 병원에 관한 일들을 적극적으로 배운다. (6) 나는 우리 병원에 관한 일들을 열정적으로 배우기 위해 노력한다.
Intrapreneurial intention	(1) 나는 혁신적인 아이디어를 주장하기 위해서 다른 사람들을 설득하려고 노력한다. (2) 나는 새로운 아이디어를 실현시키기 위한 방법을 생각할 때에 구체적인 과정을 만드는 편이다. (3) 나는 우리 병원을 위해서 여러 가지 아이디어를 생각한다. (4) 나는 우리 병원의 발전을 위한 새로운 프로세스나 서비스를 생각하는 편이다. (5) 우리 병원에서 다른 사람들이 조심스러워 하는 일에 대해서 나는 새로운 방법을 가지고 과감하게 진행하는 편이다. (6) 나는 내 스스로의 비즈니스를 위해서라면 이곳 병원에서 받는 연봉을 포기하고 과감하게 그만 둘 의도가 있다. (7) 나는 우리 병원을 위해서라면 실패할 수 있는 가능성을 무릅쓰고라도 내 스스로 리스크를 떠안을 수 있다. (8) 상당한 이해관계가 걸려 있는 상황이라면, 우리 병원을 위해서라면 잘못 될 수 있는 가능성이 있더라도 결국에는 성공할 수 있다는 생각을 가진다.

〈국문초록〉

연구의 목적: 본 연구의 목적은 중소 지방 병원 내에서 사내 기업가 활동 의도의 선행요인을 탐색함에 있다. 본 연구는 병원 종사자의 개인적 역량과 경영적 역량이 사내 기업가 지향성에 긍정적인 영향을 미칠 것으로 예측하였다. 그리고 사내 기업가 활동 의도에 미치는 사내 기업가 지향성의 영향은 사내 기업가 활동의 헌신에 의해서 매개가 될 것으로 예측하였다.

연구방법론: 우리나라 창원시에 위치한 'D'병원과 'E' 병원에서 종사하는 299명의 의료인으로부터 설문자료를 수집하였다. 그리고 수집된 자료에 대하여 구조방정식 모형분석을 수행하여 연구모형과 연구가설을 통계적 유의수준에서 평가하였다.

연구결과: 본 연구의 주요 결과는 다음과 같다. 첫째, 연구대상자가 인식하는 개인적 역량과 경영적 역량은 사내 기업가 지향성에 유의한 정(+)의 영향을 미치는 것으로 나타났다. 둘째, 사내 기업가 지향성은 사내 기업가 활동 의도에 유의한 정(+)의 영향을 미치는 것으로 나타났다. 셋째, 사내 기업가 활동 의도에 미치는 사내 기업가 지향성의 영향은 사내 기업가 활동 헌신에 의해서 매개가 되는 것으로 나타났다. 넷째, 비의료 집단 내에서의 사내 기업가 활동 헌신의 매개효과는 의료집단 내에서의 매개효과보다 크며, 관찰된 차이는 통계적으로 유의한 것으로 평가되었다.

시사점: 본 연구의 결과는 우리나라 중소병원이 가지는 어려움과 문제점을 해결하기 위해 수행해야 하는 전략 중의 하나인 사내 기업가 활동을 활성화하기 위한 중요한 전제조건과 시사점을 제공한다.

중심단어: 사내 기업가 활동 의도, 사내 기업가 지향성, 사내 기업가 활동 헌신, 중소형 병원, 개인적 역량, 경영적 역량