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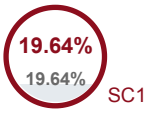

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HOW INTELLECTUAL CAPITAL CAN DEVELOP INNOVATION AND PERFORMANCE OF ACCOUNTING STUDY PROGRAM ?

Sigit Hermawan1*, Niko Fediyanto2, Wiwit Hariyanto3, Prasetyo Utomo4, Amelia Nugraha Dini5
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ABSTRACT
Purpose: **The purpose of this study is to explore the** role of

intellectual capital in developing innovation and performance of accounting study programs in Indonesia
Methodology/approach: This type of research is qualitatively interpretive. Because the researcher understands the meaning contained in the interpretation of key informants.
Findings: Human Capital is a key factor for intellectual capital to develop innovation and performance of accounting study programs. IC, both integrated and individually, plays a role in improving the performance of IAPS 4.0-based study programs
Practical implications: The results of this research can be used by the head of the accounting study program in achieving superior accreditation based on IAPS 4.0, namely by utilizing the role of intellectual capital in developing innovation and performance.
Originality/value: The originality **of this research is to explore the** intellectual capital component associated with the innovation component and the performance component of the IAPS 4.0-based accounting study program. This research also explores basic theories such as role theory, human capital theory, and the resources-based theory.
KEYWORDS: Accounting Study Program; Innovation; Intellectual Capital; Performance.

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ABSTRAK
Tujuan penelitian: Tujuan penelitian ini adalah mengeksplore peran intellectual capital dalam mengembangkan inovasi dan kinerja program studi akuntansi di Indonesia
Metode/pendekatan: Jenis penelitian ini adalah kualitatif interpretive. Karena peneliti memahami makna yang terkandung dalam interpretasi informan kunci.
Hasil: Human Capital adalah faktor kunci bagi intellectual capital untuk mengembangkan inovasi dan kinerja program studi akuntansi. IC baik yang terintegrasi maupun individual berperan dalam meningkatkan kinerja program studi akuntansi berbasis IAPS 4.0
Implikasi praktik: Hasil riset ini dapat digunakan oleh ketua program studi akuntansi dalam meraih akreditasi unggul berbasis IAPS 4.0, yakni dengan memanfaatkan peran intellectual capital dalam mengembangkan inovasi dan kinerja.
Orisinalitas/kebaharuan: Orisinalitas riset ini adalah mengeksplorasi komponen intellectual capital yang dikaitkan dengan komponen inovasi dan komponen kinerja program studi akuntansi berbasis IAPS 4.0. Riset ini juga mengeksplore teori dasar seperti teori peran, teori human capital, dan the resources based theory
KATA KUNCI: Inovasi; Intellectual Capital; Kinerja; Program Studi Akuntansi.

INTRODUCTION

The accounting study program as a producer of accounting graduates or accountants must continue to innovate and improve performance because the challenges ahead are getting tougher due to environmental changes, namely the industrial revolution 4.0. There are many branches of the accounting profession that will disappear due to IR 4.0, such as accountants (Frank et al., 2019; M. Mohamed, 2018), labor in the taxation sector (Oztemel & Gursev, 2020; Rainnie & Dean, 2020), management accountant, bookkeeper, budget analyst (Kroon et al., 2021). Therefore, study program managers must develop innovation and performance in order to adjust to changes in the current environment.

The development of innovation and study program performance can be done by optimizing intellectual capital (IC) ((Chatterji & Kiran, 2017; Saengchai & Sutduean, 2019; Zerr & Aaqoulah, 2021; B. Zhang & Phromphitakkul, 2021). IC can drive human capital owned by the organization, create capital structures in the form of information technology, organizational culture, innovation, systems, and procedures and optimize relational capital through an effective marketing system and good relations with customers. IC can realize innovations that has never existed before or innovations that was initially less optimal to be effective. With innovation, the accounting study program must be able to make something

different from before. Innovation related to IR 4.0 is the development of human capital owned by the study program, namely the chairman and secretary and lecturers as drivers of innovation; innovation can be carried out in the study program by the chairperson and secretary, as well as learning innovation by lecturers to face IR 4.0.
Another thing that can be prepared by the accounting study program in IR 4.0 is to have superior performance in the Study Program Accreditation Instrument 4.0 (IAPS 4.0). Superior performance in IAPS requires that there are international criteria in many aspects. For example, the existence of international students in study programs, international cooperation, recognition of international students and lecturers, joint research, and international community service. With this internationalization requirement, it is intended that the study program spurs its performance so that the resulting graduates can also compete and be accepted in the international world of work.
This research is different from the previous study, which produced 60 items of the intellectual capital framework for universities in Indonesia based on IAPS 4. The criteria are 30 items for the human capital component, 18 for the structural capital component, and 12 for the relational capital component (Ulum, 2019). Another study that analyzes the disclosure of IC vocational higher education in Indonesia based on the IAPS 4.0 study program accreditation instrument (Herawati et al., 2020). The results stated that the IC disclosure chosen by vocational universities in Indonesia is substantially **in the form** of images plates **and narratives** still. The **number of undisclosed** IC particulars is veritably dominant (47,40%). The most bared information is on structural capital (66%). The coming element is relational capital. Meanwhile, human capital information is only bared as important as 36 of 30 particulars.
Other studies stated that private universities in Indonesia have valuable intellectual capital (namely human capital), adequate quality **structural** capital, **and** customer **capital** that is quite valuable to provide more value for customers (Indiyati, 2015) . The results of other studies state that ICs positively affect innovative performance, and knowledge-based dynamic capabilities are mediators rather than moderators who partially mediate the relationship between ICs and innovative performance (Han & Li, 2015). This study aims to analyze intellectual capital's role in improving the innovation and performance of the IAPS 4.0-based accounting study program. The purpose of more specific research is to find the role of each component or indicator in human capital, structural capital, and relational capital for the achievement of innovation and performance of IAPS 4.0-based study programs. This is expected to facilitate the managers of accounting study programs in preparing accreditation programs and achieving superior values. The novelty of this research is to describe the IC components that play the most role in improving innovation and performance of accounting study programs, explaining the role of each IC component in improving the performance of accounting study programs based on IAPS 4.0, and and analyzing the role of the human capital theory and the resources based theory as basic theories for the relationship between intellectual capital, innovation and performance. This research implies that the managers **of the accounting study program** and lecturers get a formulation about the optimization of IC
to improve innovation and performance of the study program, the IC components that play the most role in innovation, and the relationship between IC and IAPS 4.0 indicators.
Meanwhile this research uses two basic theories: the human capital theory (HCT) and the resource-based theory (RBT). According to Human Capital Theory (HCT), organizations or companies will get large economic output results if they invest in human capital. However, in the past, this was difficult to prove and contradictory because the economy was still very dependent on the performance of tangible physical assets such as machinery, equipment,

land, and factories. The increase in business value comes more from investing in capital equipment than from labor. This has changed with the development of the modern economy and knowledge economy, which is more focused on increasing human capital through education, training, and health care, ultimately increasing the nation's economic output. This is supported by a lot of research on the role of human capital in innovation and organizational performance (Abuzyarova et al., 2019; Alnachef & Alhajjar, 2017; Wang et al., 2008)

The second basic theory is the resource-based theory which states that an organization or company will get optimal economic and performance benefits if it can maximize the role of resources or assets, both tangible and intangible both assets are strategic assets for the company (Barney et al., 2021; Borchert, 2008; McWilliams & Siegel, 2011; Wernerfelt, 1984; Yallwe & Buscemi, 2014). One of the intangible assets owned by the company is intellectual capital (IC). This IC is generally considered a strategic asset of the company compared to other assets. Having an IC and optimizing its role means that the organization or company will gain benefits for performance, competitiveness, and well-being (Hermawan et al., 2020; Mustapha, 2021; Sharabati et al., 2010).

Furthermore, intellectual capital (IC) is an intangible asset that can be maximized to improve organizational performance (Bontis et al., 2000; Hermawan et al., 2021). Operational ICs as intellectual materials are formalized, obtained, and managed to produce high-value assets. ICs are also elusive, but once discovered and explored, they will provide organizations with a new resource to compete and win. ICs are also defined as intellectual materials – knowledge, information, intellectual rights, and experience – that can be used to create property, collaborative brain power, and useful knowledge (Bontis, 2001; Manzari et al., 2012)

IC consists of three elements, **namely human capital (HC), structural capital (SC),** and relational capital (RC). Human **Capital** specifically presented individual knowledge stocks embedded in the company's capabilities collectively to provide the best solutions for employees. Some examples included in human capital indicators are know-how, education, vocational qualifications, knowledge related to work, job assessment, psychometric assessment, competencies related to work, entrepreneurial, innovation, proactive and reactive abilities, and the ability to change (Pedrini, 2007; Rosińska-Bukowska, 2019)

Meanwhile, structural capital is all the non-human knowledge in the company, such as hardware, software, database, organizational structure, patents, trademarks, and everything about organizational capabilities that support employee productivity. Or “everything that will be left in the office when the employee comes home" (da Silva et al., 2021; Nourani et al., 2018). Some SC indicators are as follows patents, copyrights, design rights, trade secrets, trademarks, service marks, management philosophy, corporate culture, management processes, information systems, work network systems, and relationships related to finance, organizational culture, processes, and routines, corporate values, social capital, and management philosophy (Díez et al., 2010; Garcia-Alvarez et al., 2011).

Furthermore, relational capital is all resources related to the company's external relationships – with customers, suppliers, or partners in research and development. This is part of human capital and structural capital related to the company's relationship with stakeholders (investors, creditors, customers, suppliers), as well as the perception they have about the company (Sulistyo & Siyamtinah, 2016; Yu et al., 2021) . Examples include an image, customer loyalty, customer satisfaction, relationship with suppliers, commercial strength, negotiating capacity with financial entities, and environmental activities (Li et al., 2019; Zahoor & Gerged, 2021)

IC must be able to be utilized by organizations to innovate. IC and innovation are interrelated, and many research results state that IC plays a role in improving organizational innovation culture. Innovation is something, whether it is a way, an idea, or an object, perceived as new by a person (Ali et al., 2021; Qurashi et al., 2020). Innovation consists of the generation of new ideas and their implementation into new products, processes, or services, which leads to the dynamic growth of the national economy and the increase in employment, and the creation of pure profits for innovative business enterprises (Baregheh et al., 2009; Gault, 2018). Thus innovation will be related to new knowledge, new ways, new objects, and discoveries. With innovation, new ideas will always appear in the organization that will give birth to new products or services and new services to improve organizational

performance.
The performance of organizations, especially study programs in Indonesia, will be assessed with the Study Program Accreditation Instrument 4.0 (IAPS). In the IAPS, nine criteria must be met for the study program to get superior criteria (Ulum, 2019; Yang & Rollastin, 2021). The nine criteria are Civil Service, Governance, & Cooperation, Students, Human Resources, Finance, Infrastructure, Education, Research, Community Service, Outputs and Achievements of Tridharma PT, and Quality Assurance. Thus this research model can be described as follows:

INTELLECTUAL
CAPITAL

• Human Capital
• Structural Capital
• Relational Capital
INNOVATION

1. New Knowledge
2. A New Way
3. New Object
4. New
Technologies
5. New Discoveries

STUDY PROGRAM
PERFORMANCE
1. Civil Service,
Governance, &
Cooperation
2. Student
3. Human Resources
4. Finance, Infrastructure
5. Education
6. Research
7. Community Service
8. Outputs and
Achievements of
“Tridharma PT”
9. Quality Assurance
Figure 1.
Research
Models

METHOD
This research can be categorized as qualitative interpretive research (Bell et al., 2021; Lemaire & Paquin, 2019). This is because researchers want to understand and explore the meanings and phenomena revealed by key informants about the role of intellectual capital in improving innovation and performance of IAPS 4.0-based accounting study programs (Akcam et al., 2015; Obeidat et al., 2017).
Thus, this research focuses on intellectual capital, innovation, and study program performance in the industrial revolution 4.0. Intellectual capital in question is human capital, structural capital, and relational capital (Bontis, 2001; Bontis et al., 2000; Cricelli et al., 2018). Innovation is a new idea, method, or device that refers to novelty (Kogabayev & Maziliauskas, 2017). Innovations in universities can be done with open innovation. The performance of accounting study programs based on the performance of accounting study programs based on IAPS 4.0 (Baron, 2021; Hasanudin et al., 2019; Mejia et al., 2019; Ulum, 2019).
Data collection techniques in this study were carried out with in-depth interviews, focus group discussions (FGD), observations, and documentation (W. Mohamed et al., 2019; Suleiman & Othman, 2021). In-depth interviews were conducted with semi-structured

interviews with all key informants, either face-to-face or online interviews (Qu & Dumay, 2011; Rumetta et al., 2020). The **Focus Group Discussion (FGD) was** conducted with several informants, including the head of the accounting study program, experts from the Indonesian Institute of Accountants, and accounting lecturers. FGD is carried out online to facilitate its implementation (Kymäläinen et al., 2022; Woodyatt et al., 2016). The implementation of in-depth interviews and FGDs is based on interview guidelines that have been prepared before, namely based on problem formulations, theories used and concepts of intellectual capital, innovation and study program performance. The FGD aims to formulate the role of intellectual capital to improve the innovation and performance of accounting study programs based on IAPS 4.0. Observation is carried out by directly observing and following the lecture process, coaching and developing lecturers, curriculum and practicum development, and implementing cooperation between accounting study programs, business partners, and the industrial world. The purpose of observation is to find out how lecturers or human capital of this study program innovate on learning and the study program develops human capital, curriculum, practicum that is part of and structural capital and cooperation with external parties which are part of relational capital. Documentation is carried out by looking for lecturer data and their curriculum vitae, curriculum and practicum data, policy data in the accounting study program, and data on external cooperation that has been carried out. By carrying out these four data collection techniques, the data owned by the researcher is complete and can be used as a data source and data validity program. Key informants in this study are Intellectual Capital experts, chairmen, secretaries of study programs, and accounting lecturers. The selection of the informant's home university is based on the accreditation of the study program, namely accredited A and accredited B. Key informants are chosen based on the researcher's judgment (Hermawan & Amirullah, 2016; Lee, 2014). IC experts need to explore and explore information about indicators owned by human capital, structural capital, and relational capital that can be maximized to improve innovation and performance of accounting study programs. It is necessary for the head and secretary of the study program because they know everything about it, ranging from lecturers, students, curriculum, laboratories, and external party cooperation. Meanwhile, lecturer informants are needed because they are the party that carries out the study program policy. Here's the key informant data.

No	Name	University
	IC Experts	
1	IU	Universitas Muhammadiyah Malang
2	IDR	Universitas Muhammadiyah Sidoarjo
3	BCP	Universitas Muhammadiyah Purwokerto
4	SHE	Kristen Petra University of Surabaya
5	ZF	Airlangga University of Surabaya
6	AA	Universitas Muhammadiyah Yogyakarta
	Head & Secretary of Accounting Study Program	
7	AQ	Universitas Airlangga Surabaya
8	M	Universitas Muhammadiyah Makassar
9	IT	Universitas Muhammadiyah Jakarta
10	ZH	Universitas Muhammadiyah Sumatra Utara
11	S	Universitas Ahmad Dahlan Yogyakarta
12	SB	Universitas Muhammadiyah Sidoarjo
13	HW	Universitas Muhammadiyah Yogyakarta
14	RMA	Universitas Muhammadiyah Jember
	Lecturer	
15	EW	Wijaya Kusuma University of Surabaya
16	NS	Hayam Wuruk University of Surabaya
17	S	Universitas Muhammadiyah Gresik

Source : Data Processed

Test the validity of data using credibility test and transferability. The credibility test uses **two triangulations, namely method triangulation and data source triangulation** (Carter et al., 2014; Corral-Robles et al., 2021; L. Haven & Van Grootel, 2019). Technically, triangulation methods by crosschecking **the results of in-depth interviews** with documentation **data,** FGD result data, and observation data. For example, human capital development data (lecturers)

was obtained through crosscheck interviews with documentation data in the study program. Likewise, documentation data on curriculum changes adapted to the Industrial Revolution 4.0 are crosschecked when conducting an in-depth interview with the head of the study program. To triangulate data sources, you can crosscheck between key informants (Kusmaryono et al., 2021; Sri Suryanti & Supeni, 2019). For example, the head of the study program's interview results is crosschecked with an accounting lecturer.

Furthermore, the use of transferability tests is intended so that the results of this study can be applied to the situations of others (Latukismo et al., 2021; Pratihari & Uzma, 2020). For this reason, research reports are detailed, clear, systematic, parsimony, and trustworthy, so readers or other researchers can easily understand them and apply them to different circumstances. In this study, each in-depth interview with key informants and FGDs was made a transcription which was then used for Coding and selecting the same theme. Data analysis was carried out during the study. This is the hallmark of qualitative research. The stages of data analysis are data collection, data reduction, data presentation, and conclusion drawing (M. B. Miles & Huberman, 1994; M. Miles & Huberman, 2014; Williamson et al., 2018).

The stages of this research are as follows:

Table 1.
Key
Informant

_____

RESULT AND DISCUSSION

Based on the research process (Figure 2), when the data collection is completed, Coding is obtained with the same theme or research topic, namely:

Here's the explanation:

Human Capital Plays a Very Important Role in The Development of Innovation Accounting Study Program

As already explained, IC has three components, namely Human Capital (HC), Structural Capital (SC), and Relational Capital (RC). To formulate the role of IC in improving the innovation and performance of accounting study programs, researchers conduct in-depth interviews with study program heads, study program secretaries, and accounting lecturers. One of the university's HCs is the chairman and secretary of the study program. According to the study results, HC, in the form of the chairman and secretary of the study program, is the shaper and developer of HC owned by the study program. The meaning of HC here is lecturers, students, and alumni. The head of the study program must carry out the overall planning of the lecturer. Here's Ms. AQ's comment:

" The head of the study program is his brain because he designed everything in the study program. From lecture planning, curriculum to lecturer development, all are in the head of the study program" (excerpt of an interview with Mrs. AQ).

Furthermore, the researcher crosschecked the informant Mrs. ZH; here are her comments:

"Yes, related to lecturers, the head of the study program must also plan well. Who should go to S3 school and stand by to teach? Should not all school? Then who wants to teach? So the head of the study program must have a mapping of lecturers, including when the school is, what field of competence, the direction of research and community service, what is the head of the study program, you must know everything" (excerpt of an interview with Mrs. ZH).

Activity 1
Literature Review
of RBT basic
theory,
innovation, and
performance

Determination of
key informant

Retrieved
documentation
data

Observations

Made

Activity 2
In Depth
Interview and
Focus Group
Discussion
Data Validity Test;
Credibility,
Tranferability

Activity 3
Qualitative
Data
Analysis: data
collection,
reduction,
display, and
conclusion
drawing

Result
Formulation of
the Role of IC
to Improve
Innovation and
Performance of
Accounting
Study
Programs in
the RI 4.0 Era

Figure 2.
Research
Process

Based on the results of this in-depth interview, the researcher then triangulated the source by interviewing an IC expert, namely IU. Here are the comments:
"Indeed, the head of **the study program has** a central **role in the study program.** This means that he, as an HC has an important role in developing other HCs owned by the study program, namely lecturers, students, and alumni" (excerpt of an interview with IU).
The same thing was stated by another IC expert, namely Mrs. SHE, who is also the head of the study program. Here are the comments:
"It is true that HC in the accounting study program, namely the chairman and secretary of the study program, plays a very important role in determining the direction and implementation of achieving the objectives of the study program. I want to add the management of HC lecturers who are already seniors and juniors. This senior lecturer has a lot of experience, but the motivation for change is low, on the contrary, this junior is low in experience but high in spirit, and the motivation to follow the development of science and technology is also high. Now, this needs to concoct the indicators in HC between competence, experience, motivation, and skills in lecturers. This is the art of leadership or leadership style ahead of the study program is needed" (excerpt of an interview with Mrs. SHE).
Based on the in-depth interview results, the results were obtained that the chairman and secretary of the program as HC have a central role in the management of the accounting study program. Furthermore, during the FGD, researchers asked about the role of this HC in increasing innovation **in the accounting study program.** Here are the informants' comments.
" **The Head of the Study** Program must be creative and innovative. For example, curriculum development according to its era, the industrial revolution 4.0 must be followed. New

knowledge about the field of accounting must be shared with all lecturers. Discoveries made by lecturers should be supported. Lecturers must do many innovative new things. It may not be the idea of the head of the study program originally, but it can be observed, imitated, and modified" (Excerpts of interviews with IDR informants)

Informant IC experts, BCP, also stated the same thing, namely the head of the study program, as HC determines innovation in the form of new knowledge, new ways, new objects, new technologies, and new discoveries. Here are the comments:

"HC in the study program greatly influences the innovations developed. So whether or not innovation is advanced in the study program is strongly influenced by the head of the study program as an HC, whether he is a learner or not. For example, new technologies in the accounting laboratory must be known and sought to be applicable to students when participating in practicum (Citation of an interview with BCP).

Coding Same Theme

A Human Capital Plays an Important Role in Increasing Innovation in the Accounting Study Program

A.1 Chairman and Secretary of The Innovation Key-Bearing Study Program in The Study Program

A.2 Lecturer determining innovation in learning and practicum

B The Role of IC in Improving the Performance of the IAPS 4.0-Based Accounting Study Program

Data Source: Coding Process

Table 1.

Research Themes Resulting from Coding

(Method Triangulation and Supporting Theory-Research Triangulation)

Meaning of the Role of ICs	Role Operationalization Credibility Test / Triangulation Test	Actor or Party Playing the Role
1. Chairman and secretary as central HC in the study program		
2. HC (Chairman and Secretary) of the study program manages other HC in the form of lecturers, students, and alumni		
3. HC (Chairman and Secretary) of the study program plays a role in the management of SC in the form of information systems, organizational culture, and study program databases		
4. HC (Chairman and Secretary) of the study program plays a role in the management of RC in the form of relationships with accountant professional organizations, graduate user societies, and other societies		
5. HC (Lecturer) plays a role in shaping the character, knowledge, and skills of students and alumni	1. The role theory (Biddle, 1986; Yong et al., 2020).	

2. The Resource based theory (Barney et al., 2021; Freeman et al., 2021; Kamaluddin & Rahman, 2013)
3. IC Research (Córcoles et al., 2011; Corcoles et al., 2012; Ramírez Córcoles et al., 2011; Ramírez et al., 2017, 2019)
4. Cross Check Informant: EW, M, SB, NS, S.

The role of IC in study program innovation

1. Chairman and Secretary as HC shapers innovation in SC and RC
2. Lecturers as HC shapers innovation in learning, research, community service, scientific publications, and roles in society
3. SC study program that forms a culture of research innovation, learning innovation, practicum innovation, information system innovation
4. RC study program that forms innovative relationship models with professional organizations, society, and alumni.
1. (Todericiu & Şerban, 2015)
2. (Alserhan, 2017; Iqbal et al., 2019; Peralta et al., 2018; Qassas & Areıqat, 2020)
3. Informant: RMA, S, HW.
Source: Display Data and Data Reduction

Table 2. Research Results and Credibility Test

1. The Role of IC in Improving the Performance of IAPS 4.0-Based Study Programs
The role of ICs in improving organizational performance has been widely researched, and the result is that ICs can improve performance, competitiveness, and welfare. Technically it can be the components of the IC as a whole or the IC separately. This is also the subject of the problem in this study. Here are the informants' comments.
"Yes, all components of the IC play a very important role in the performance of the IAPS 4.0-based accounting study program with nine criteria. So if we look at it, HC plays the most

role in that performance. However, when the HC has made a good information system or made the right SOP, the one who works must be the system, the SOP, or the SC that works. Likewise with RC. The pattern of cooperation that has been systemized, or good relations with professional organizations that the HC has carried out, must be maintained and developed. Such a thing means that effective RC runs no longer HC (Citation of FGD results with AA)

IC experts, namely ZF informants, approved the AA informant's statement. Here are the comments:

"Technically, it is this. HC, as the center of this IC, forms SC and RC. The head of the accounting study program makes rules about the student's final project, SOP for thesis guidance, organizational culture, research culture in the study program, systems in the curriculum, and rules in this practicum, all SC. The head of the study program also draws up rules on cooperation with professional organizations, assisted MSMEs, and student internships; this is all RC. Based on this, HC, SC, and RC play a role in improving the performance of the IAPS 4.0-based accounting study program (Citation of FGD results with ZF)

(Method Triangulation and Supporting Theory-Research Triangulation)

Meaning of the Role of ICs	Role Operationalization	Credibility Test
The Role of IC in Improving the Performance of IAPS 4.0-Based Study Programs		
1. IC as a whole plays a role in improving the performance of accounting study programs		
2. HC components play an important role in all performance criteria of accounting study programs		
3. The SC component plays more important roles in the criteria of governance, governance., human resources., finance and infrastructure., education., outputs, and achievements of the tri dharma (the three main obligations) of higher education and quality assurance		
4. The RC component plays a more important role in the criteria for cooperation, research, community service, outputs, and achievements of the tri dharma of higher education		
	1. The human capital theory (Fix, 2021; Tan, 2014)	
	2. Research of human capital (Pasban & Nojedeh, 2016; Radianto & Gumanti, 2019; Ulum, 2019)	
		3. Cross Check Informant: IU, IT, ZH, NS, BCP.

Source: Display Data and Data Coding

Table 3.
Research
Results and
Credibility
Test

No IC components Study Program Performance with IAPS 4.0
1 Human Capital Students, Human Resources, Research, Outputs and Achievements of the "Tri Dharma" of Higher Education
2 Structural Capital Civil Service, Governance, Finance, Infrastructure, Quality Assurance, Outcomes and Achievements of the "Tri Dharma" of Higher Education, Quality Assurance
3 Relational Capital Cooperation, Community Service, Outcomes and Achievements of "the Tri Dharma" of Higher Education
Source: Display Data and Data Coding

DISCUSSION

Human Capital Plays An Importance Role in The Development of Innovation in the Study Program

Human Capital in the accounting study program, namely the chairman and secretary of the study program, plays a very important role in developing other human capital, namely lecturers, students, and alumni. In lecturer development, it starts with a planner for the overall development of lecturers. Making mapping of lecturers who must study doctoral, who must follow lecturer certification, accounting professional certification, and lecturer supporting certification (research method certification, scientific article review). The head of the study program must also be able to maximize the potential of junior lecturers with senior lecturers who have a lot of experience in the form of academic collaboration, collaboration in the preparation of textbooks, research collaboration, community service, and scientific publications. The head and secretary of the study program must also present a high academic culture, research culture, the high culture of innovation, and other organizational cultures. The chairman and secretary of the study program must also be the carrier of innovation for lecturers in activities outside of shopping. For example, lecturers do community service. The accounting study program must have good relations with the Indonesian Institute of Accountants, the Indonesian Tax Consultants Association, Public Accounting Firms, Tax Consulting Offices, BUMDES, and other organizations that lecturers can use to do community service. This is the central role of the chairman and secretary of the accounting study program.

The role of the chairman and secretary of the accounting study program for students is to compile the overall student activity policy, motivate students in lectures, form the student association of departments and laboratory assistants, and motivate students to learn soft skills and hard skills outside the study program. Thus, it is necessary to have policies and implementation of innovations that the head of the accounting study program must take. It needs new ways, knowledge, technologies, objects, and discoveries that can be applied to students in the accounting study program. So it is with alumni. The chairman and secretary of the study program are the relationships between alumni and the university, creating harmony or good relations with alumni, providing information to alumni if there are job vacancies, and others.

Another important Human Capital in the study program is the lecturer because it determines innovation in learning and practicum in the laboratory. Lecturer is also a designer of the

Table 4.
The Role of HC, SC, and RC on the Performance of The Accounting Study Program

learning process for students. The lecturer determines the "Black and White" of students. Lecturer created an innovative Semester Learning Plan, designing midterm exam questions and end-of-semester exams. Lecturer designs the final abilities that students have after attending lectures. Lecturer design hard and soft skills owned by students through the

courses they teach. Lecturers must conduct innovative research and community service related to the course's learning process; lecturers innovate learning through e-learning, make innovative learning media, textbooks, and modules, and make Youtube videos for lectures. Lecturers must also create scientific articles sent to reputable international journals and compile reference books, monograph books, and textbooks. Lecturers must also carry out community service funded by campuses, government agencies or donor agencies and be active in the community or religious organizations. The results of the innovation of lecturers in any field will increase the innovation in the accounting study program.

The important role of the chairman and secretary of the accounting study program, as well as lecturers as HC, is following the role theory (Demirduzen & Thies, 2022; Markham et al., 2010). This theory describes social interaction in the terminology of actors who play according to culture's established rules. Under this theory, the expectations of roles are a common understanding that leads to behavior in everyday life. People in a particular field must demonstrate a role in their respective fields. In this study, the role was played by the chairman, secretary of the study program, and accounting lecturers. The chairperson and secretary of the study program form and color the innovation in HC, SC, and RC owned by the study program, while the lecturer forms and colors innovation in the learning process, the implementation of research, community service, and scientific publications as well as other activities in professional and community organizations. Thus, in this study, HC study programs, namely the chairman and secretary of the study program and lecturers, are the key holders of the success of study program innovation (Anglin et al., 2018; Markham et al., 2010).

The results of this study can be attributed to the human capital theory (Fix, 2021; Tan, 2014) According to this theory, organizations, including universities must invest in training and improve their human capital. This is important as an investment from other forms of capital. Strategic action requires a special set of physical, financial, human, or organizational resources so that competitive advantage is determined by its ability to acquire and retain resources. Thus, university management needs to invest in training and competency improvement in the head and secretary of the study program and lecturers because an HC plays a very important role in innovation in the study program (Kozhushko, 2021; Sultanova & Chechina, 2016).

Next, the results of this study can also be attributed to the resources-based theory (Barney, 2001a, 2001b; Borchert, 2008; Das & Teng, 2000). Resource-based theory (RBT) states that organizations achieve **competitive advantage and superior performance** through acquiring **and** using strategic **assets** critical to **competitive advantage and superior financial performance** (Barney, 2001a) . Both tangible and intangible assets are considered potential strategic assets. According to this theory, the benefits of these two assets are a positive result between the company's resources and performance measurement. The inclusion of intangible assets is obtained from its ability to have all the characteristics of strategic assets. When most intangible assets do not qualify as strategic assets, ICs are generally considered important strategic assets. Having an IC means that the company possesses special and valuable knowledge. As the results of this study state, HC plays an important role in the innovation of accounting study programs; thus, the development and optimization of HC in the future are very necessary. As an intangible resource, HC has proven itself as a "key

holder" of the success of the accounting study program through various innovations carried out (Abuzyarova et al., 2019; Chatterji & Kiran, 2017; Merritt, 2015)

The Role of IC in Improving the Performance of the IAPS 4.0-Based Accounting Study Program

The role of IC in improving university performance has been proven (Anggraini et al., 2018; Arias-Pérez et al., 2019; Mustapha, 2021; Peralta et al., 2018; Ramírez Córcoles et al., 2011). The results of this study show that IC as a whole plays a role in improving the performance of accounting study programs. Its operationalization is demonstrated by integrating HC, SC, and RC components to improve the performance of IAPS 4.0-based accounting study programs with nine criteria. The integration of the IC resulted in various innovative policies related to the performance of accounting study programs ranging from criteria one to nine. Policies result in a new governance system, innovative governance, and implementation cooperation. Cooperation not only stops at the time of the Memorandum of Understanding (MoU) but also there must be the implementation of a program of activities and also its benefits for the accounting study program. Cooperation must also reach the international level. This, of course, requires an IC in the form of an RC that can reach cooperation at the

international level. For the criteria, students also need international students as a condition so that the accounting study program can get superior scores. It also requires a network of international cooperation, so RC's role is very large in this regard.
For the criteria for human resources, the lecturers and educational staff are referred to. In this criterion, to achieve superior scores, the accounting study program must have 60% doctoral educated lecturers and lecturers with academic positions of associate professors and professors. Lecturers must also be professionally certified, with professional or industrial competency certification. Lecturers must have recognition up to the international level. Lecturers must conduct research, the tri dharma of higher education, scientific publications, and Intellectual Property Rights. Three IC components are needed with criteria like this: HC, SC, and RC. HC required is the level of education, competence, experience, training, and certification that has been carried out. SC that is needed is an operational system of procedures, IT systems, organizational culture, research culture, a culture of community service, and a culture of writing scientific papers. The RC needed is a relationship with researchers, a relationship with community service partners, and a relationship with professional and community organizations.
For financial criteria and infrastructure, accounting study programs require more SC that achieve superior goals. The finances in the study program are only for the use of funds, namely for educational, operational costs, student operational costs, research costs, community service costs, HR investment costs, and investment costs for facilities and infrastructure. The facilities and infrastructure required are laboratories and infrastructure data owned by the accounting study program. Thus, this criterion requires SC in the form of a financial information system that the accounting study program, an operational system for financial procedures, and an IT system for financial management and infrastructure can access.
Furthermore, for curriculum criteria, it is very necessary for HC and SC. HC needs the knowledge, skills, competencies, and experience of the chairman and secretary of the accounting study program to compile a curriculum according to the needs of stakeholders. For SC, what is needed is a system and procedure, and policy to implement the curriculum in the study program, including the implementation of work programs that have been designed. HC and SC are needed for this research criteria because more research activities

require skills, knowledge, research experience, research culture, a culture of writing scientific papers, and other outputs. For the criteria of community service, more activities are carried out off-campus and partnering with the community. For example, providing training and assistance to MSMEs, BUMDES, and other community organizations. Thus RC is more needed on this criterion.
The next criterion is the output and achievement of the tri dharma of higher education. This criterion requires all IC components, namely HC, SC, and RC, because it is the result of all the criteria that existed before. Performance indicators for these criteria include learning outcomes, student achievement, educational effectiveness and productivity, graduate competitiveness, graduate performance, and research and community service outputs produced by students. Such indicators require the collaboration of HC, SC, and RC components. **This means that not only the** role of **one of the components of the** IC but the whole component plays a role. The last criterion is quality assurance. Two things become performance assessments on this criterion, namely the evaluation and control of the Internal Quality Control System and the availability of quality documents for the Internal Quality Assurance System. Both of these things require higher SC compared to HC and RC. This is because a system or standard operating procedure (SOP) is needed, which is an indicator of SC. Universities, faculties, and study programs that are able to compile good SOPs have 24 required standards, and have quality documents will always be able to maintain quality assurance and improve it.
Thus the results of this study confirm that IC components, both integrated and individually, have an important role in improving the performance of accounting study programs based on IAPS 4.0. Integrated ICs means interrelated HC, SC, and RC components. Individual ICs are HC, SC, and RC components that play a role in several study program performance criteria. However, it should be noted that this individual IC cannot independently play a role in the study program's performance criteria, which is a greater role than other components of the IC. So these IC components will always provide roles together but with different percentages. The results of this study support previous research that IC plays a role in improving the performance of universities and study programs (Kichuk et al., 2021; Mumtaz

& Abbas, 2014; M. Zhang et al., 2019)

CONCLUSION

There are two important things as a result of this research; Human Capital has a very important role in developing innovation, and the role of IC in improving the performance of IAPS 4.0-based study programs. The human capital study program is the chairman and secretary of the study program, lecturers, students, and alums. The chairman and secretary of the study program and lecturers are human capital who play an important role in innovation development in the study program. HC's position is as the key holder of innovation success in the accounting study program. It is because the chairman and secretary of the study program are the drivers of innovation carried out by HC, SC, and RC study programs. For lecturers as HC, it also drives learning programs for students. Students' quality depends on the lecturer who provides course learning and practicum.

The results of the second study stated that IC, both integrated and individually, plays a role in improving the performance of IAPS 4.0-based study programs. This IC role can be demonstrated by the interrelationship of the role of each IC component on the nine criteria in IAPS 4.0. The other components will always support the role of each IC component. So

the IC component cannot stand alone in carrying out its role in the performance of study programs related to accreditation instruments.

The suggestion for the next research is to conduct survey research on the head of the accounting study program, who has conducted an IAPS 4.0 accreditation assessment and is associated with IC. For managers of accounting study programs to optimize the role of HC, which has been proven to play a very important role in IC management for the development of innovation and performance.

The limitation of this study is that some in-depth interview and FGD activities were carried out online due to the COVID-19 pandemic and the distance so that there could be meaning left behind in the research activity. With the atmosphere that is normal again or the COVID 19 outbreak has slowed down, for the next research, it is better to use in depth interviews and FGDs offline.

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