

Human capital competitiveness model in the digital era of craft creative industry entrepreneurs

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Abstract

The purpose of this paper is to analyze a digital competency-based human capital competency (HCC) model in the 5.0 era. To achieve the purpose, it is important to integrate HCC with the dimensions of talent, flexibility, productivity, superior performance, and personal service. Digital competency covers the dimensions of information literacy, security, internal communication of digital content, and problem-solving. The idea is that digital competency has a positive impact on HCC. This study analyzed the relationship of each dimension according to the research model. The hypothesis was tested with representative data from 352 creative craft industry entrepreneurs, in 12 cities in the province of West Java, Indonesia. The analysis tool used was Smart PLS structural equation modeling with a disjoint two-stage approach. The findings suggest that the human capital competitiveness model requires digital competency support in the form of information literacy, security, and digital content. The overall results support the fact that digital competency has a positive influence on HCC. However, collaborative communication and problem-solving were found to be ineffective by creative craft industry entrepreneurs with no effect on HCC. The digital safety effect does not have a positive effect on superior performance. It was also found that digital content only affected talent, performance, and personal service. Overall increasing digital competence can be a solution for increasing HCC.

Keywords: *creative craft, competitiveness, competency, digital, human capital*

JEL Classification: C21, E24, J24, O15

1 INTRODUCTION

The role of human resources (HR) is important for economic progress (Gulaliyev et al., 2019). Since the implementation of the ASEAN Economic Community (AEC) in 2015, Indonesia has benefited from the abolition of tariff and non-tariff boundaries for each country in ASEAN. As an archipelagic country, Indonesia has its challenges in facing the AEC, one of which is that the free market creates a more competitive atmosphere. This global competition certainly requires superior human resources (Chou et al., 2020). Therefore, to participate in producing superior human resources for Indonesia, creativity and innovation are needed (Vyas & Vyas, 2011), which must be achieved by Indonesian human resources through increasing capabilities and competencies, so that they can compete in this dynamic and competitive era.

Human capital can increase value and provide greater returns (Becker, 1993; Fitz-enz, 2009). Value in humans is formed by intellectual capital, social capital, and moral capital (Elsharnouby & Elbanna, 2021). Therefore, investing in people to improve welfare is the right thing to do. The more skills, competencies, and abilities are trained, the more prepared people will be to compete with their environment. If properly invested, HR will shift into valuable human capital, which becomes the core mover and developer of an organization or company (Becker, 1993; Schultz, 1961). Many companies become advanced because they have qualified capabilities and competencies (Luthans & Youssef, 2004). It is important to learn how human capital can cause small companies to become big, more advanced, and more stable. Creative human capital

can make cultural heritage economically valuable (Landoni et al., 2019; Sarto et al., 2020). In Indonesia, several creative economies have explored cultural heritage by creating creative industries. This study will analyze the quality of human capital competitiveness in companies engaged in the creative industry, which has not been evenly distributed.

Creative industry SME entrepreneurs in Indonesia are only 21 million, or 32% of the total 64 million, leaving 68% of SMEs that have not yet utilized digital technology in developing their businesses (Yusuf, 2022). This needs attention in order to compete in the MEA community. Several factors have become obstacles faced by creative industry entrepreneurs. The first factor is related to the education level of craft creative industry entrepreneurs, which is still dominated by high school graduates. This has impacted their performance in terms of performing digitally literate activities in their daily workload.

Creative industry entrepreneurs need training to hone their skills, as the government accelerates the implementation of digital services (Srii003, 2023) and inclusive digital economic ecosystems (Erbi, 2023). Achieving inclusive digital economic digitization requires synergy and preparedness of skills for the privacy and security of user data so that business entrepreneurs remain calm. Digital competences are expected to help increase the competitiveness of human capital, in realizing the acceleration of economic digitalization so that the economy is more advanced.

The acceleration of digitalization due to the Industrial Revolution 4.0, Society 5.0, and the impact of the Covid-19 pandemic makes it necessary to upgrade the human capital competence with digital literacy to equip human resources with the necessary skills to compete in a more digital world (Reisoglu & Çebi, 2020). With digital competence, business people can cross virtual boundaries, easily adapt and reconfigure international business models (Cahen & Mendes Borini, 2019).

Studies regarding human capital competencies have been conducted (Flores et al., 2020; Sarto et al., 2020) that discussed human capital in large organizations and companies and linked it to innovation, performance, and educational productivity. Meanwhile, this study explores individuals and small and medium enterprises (SMEs) engaged in the craft creative industry in 12 cities in West Java, Indonesia.

This study emphasizes analyzing the factors that underlie human capital in increasing self-worth by optimizing digital competencies to be able to win a business competition. Describing individual capital in increasing the value of competitive human capital still needs to be developed. The research results serve as a guide in building basic human capital in the digital era that can compete so that creativity-based SMEs continue to grow the country's economy.

This study first describes the state of digital competence and the competitiveness of human capital. It then analyzes in detail the effect of digital competence on the competitiveness of human capital among the craft creative industry entrepreneurs in West Java, Indonesia.

2 THEORETICAL BACKGROUND

2.1 Human Capital Competitiveness

The concept of human capital investment was first introduced by economist Theodore W. Schultz in 1961. He said that the process of acquiring knowledge and skills through education is not just a consumptive activity, but a form of investment. Human capital is also the core of a company, realized if the components of individual ability, individual motivation, leadership, organizational climate, and effectiveness of cooperation can be combined (Mayo, 2006). Investments in human capital made by companies certainly aim to increase organizational

value. It is expected that any company can develop an employment support system to compete and promote sustainability.

The concept of human capital is constantly evolving. In organizations, human resources refer to the combination of intelligence, skills, and expertise that give the organization unique characteristics and traits (Bontis, 2002). A sustainable competitive advantage can be achieved if the company has a pool of human resources that cannot be imitated or replaced by rivals (McShane & Glinow, 2017). An important element in developing an organization's competitive position is the unique talents of employees, including superior performance, productivity, flexibility, innovation, and the ability to provide a high level of personal customer service. Employees with these elements are the key to successful activities and external relations (Baron & Armstrong, 2007). Superior performance, productivity, flexibility, innovation, and service capability are used as indicators in this study.

Moreover, human capital can be measured by talent. Talents (valuable and unique) can be used as capital (Gelens et al., 2013). Talent can be pooled into a skilled, engaged, and committed workforce. (Baron & Armstrong, 2007). Managing talent can lead to the growth of a company, because employees who are supported by talent will have job satisfaction and commitment, thereby reducing turnover (Malik et al., 2021). In addition, talent management will affect the ability to innovate (Huang et al., 2022).

Otherwise, high performance can only be sustained by qualified human capital (Yeh et al., 2019). In this study, entrepreneurs as human capital in the craft creative industry must also be able to show high performance so that the business they run can go international. One way is by increasing entrepreneurial orientation (Karami & Tang, 2019). In this disruptive era, of course, the quality of human capital must also be supported by technology (Blichfeldt & Faillant, 2021) and increasing capabilities that support competitiveness, such as the ability to innovate and network to produce international performance (Setyawati et al., 2019). The performance and productivity of quality human capital can be improved with qualified education (Timothy, 2022).

In addition, human capital competitiveness is also inseparable from the way employees or entrepreneurs behave, such as customer service, flexibility, and innovation. Developing human capital cannot be separated from the transfer of knowledge. Services provided at work can improve learning and experience, thereby resulting in employee innovation (Tortora et al., 2021). Currently, services require technical support to produce high performance (Blichfeldt & Faillant, 2021), especially in the craft creative industry, which requires new ideas and continuous innovation (Landoni et al., 2019). Innovation is closely related to employee flexibility. Employees with a flexible and agile attitude can easily get along and team up to produce an organizational culture (Khan & Tao, 2022), especially if supported by digitalization (Chirumalla, 2021). This, in turn, can increase competitiveness.

Based on these facts, this competitive human capital study develops the concept adjusted to the demands of the 5.0 era, which is closely related to digitalization (Baron & Armstrong, 2007). Then talent, superior performance, productivity, flexibility, innovation, and service capabilities are used as indicators.

2.2 Digital Competence

Digital competence is a set of existing knowledge, skills, and attitudes necessary for personal and professional development in various contexts (Guzmán-Simón et al., 2017). Digital competence can be used as a strategy to improve digital special relations and advance socio-

economic development (Alam et al., 2018). The concept of digital competency comes from Vuorikari et al., (2016) and refers to the following aspects.

- 1) Information and data literacy, which include the ability to search, select, sort, evaluate, and manage data and information;
- 2) Communication and collaboration include the skills to interact, share, engage, and work together through digital technology. It also requires understanding and skills in managing digital identity and respect for the ethics of the digital world;
- 3) The ability to create digital content, related to various skills of developing, integrating, and re-elaborating digital content. This competency also includes an understanding of copyright, licensing, and programming.
- 4) Security, including the ability to guarantee protection for devices, data and confidentiality, health, and the environment/learning process.
- 5) The ability to solve and overcome problems technically, be able to identify the needs and necessary technological responses, be creative in the use of digital technology, and be able to identify deficiencies in digital technology.

Whatever the profession, in the IR 4.0 era, digitalization is a necessity, because digitalization technology enables tasks to be performed more easily. Currently, many craft creative industry entrepreneurs in Indonesia are still not digitally literate, even though they realize that digitization technology provides opportunities to advance business. The digital technology used will determine the strategy set (Ghobakhloo & Fathi, 2020). Technology will update managerial knowledge, can develop social capital, change the way teams build, and reshape organizational capabilities. Therefore, the need for digital technology, in terms of content or techniques, will be required by various professions (Van Laar et al., 2019), including creative craft industry entrepreneurs to support business development.

Digital transformation has made it easier for companies to operate on a content or technical basis. The benefit of digital transformation also provides service convenience to create customer value (Matarazzo et al., 2021). Craft creative industry entrepreneurs who still have difficulties in retaining customers due to manual services can be helped by digital technology through e-services. Customer value increases when satisfaction from service is felt. Customer satisfaction provides opportunities to improve products and processes (Chirumalla, 2021). Innovations are emerging and competitiveness is strong. Digital transformation can provide value for competitiveness (Ahmed et al., 2022). Therefore, it is hoped that business entrepreneurs in the craft creative industry can use digital transformation to advance their business (González-Varona et al., 2021) by exploring digital competencies.

Digital competence is becoming a necessity, especially for the creative industry to be competitive. Digital competence can make it easy for entrepreneurs to service and innovate, thereby developing their businesses. The following are operational variables:

Table 1 – Operational Variables. Source: own research

No	Variable Concept	Dimensions	Indicators	Measurement
1.	Digital Competency (X) Digital competence is a set of knowledge, skills, attitudes, abilities,	1. Information and data literacy.	1. search capabilities. 2. the ability to choose, 3. sorting ability, 4. select skills, 5. ability to evaluate,	1. Level of ability to collect data needed to support the business. 2. Level of ability to select data according to what is needed 3. Level of ability to sort data according to needs

<p>strategies, and awareness needed when using ICT and digital media to perform tasks; solve the problem; convey; manage information; collaborate; create and share content; and build knowledge effectively, efficiently, precisely, critically, independently, flexibly, ethically, reflectively for work, leisure, participation, learning, socializing, consuming and empowerment (Ferrari, 2012).</p>		<p>6. ability to manage data and information.</p>	<p>4. Level of ability to process data into information needed in running a business. 5. Level of ability to evaluate the accuracy of information 6. Level of ability to process information for making the right decisions for business continuity. 7. Level of ability to make the right decisions to run and develop a business.</p>
	<p>2. Communication and collaboration.</p>	<p>1. skills of interacting, sharing, engaging, and collaborating through digital technology. 2. understanding and skills in managing digital identity 3. respect for the ethics of the digital world.</p>	<p>1. The level of understanding of the effectiveness of internal communication to build a common understanding of the business being carried out 2. The level of understanding of the effectiveness of external communication to build business partnerships. 3. Skill level in using digital technology with the business being run 4. The skill level on how to combine manual business with digital technology 5. Skill level in working with digital technology to develop business 6. Skill level in managing features as a digital identity for businesses 7. Skill level in using digital technology by applicable regulations (ethics).</p>
	<p>3. Ability to create digital content.</p>	<p>1. digital content development, integration, and re-elaboration skills. 2. understanding of copyright, licensing, and programming.</p>	<p>1. The level of understanding of how to create new information with electronic media for business purposes 2. Skill level in developing digital products for business purposes 3. The level of ability to create new digital features that are better than what existed before 4. Level of ability to understand copyright, licensing, and business programming.</p>
	<p>4. Security</p>	<p>1. ensure the protection of electronic devices 2. data protection and confidentiality, 3. health, and environment/learning process.</p>	<p>1. Level of ability to maintain electronic equipment properly 2. Level of ability to protect the confidentiality of data with capabilities 3. Level of ability to create a supportive (conducive) learning environment for business/business development</p>

		5. Ability to solve problems.	<ol style="list-style-type: none"> 1. ability to identify technology needs and responses. 2. creativity in the use of digital technology, 3. identify digital technology deficiencies 	<ol style="list-style-type: none"> 1. Level of ability to recognize digital technology that is suitable for business 2. Level of ability to describe the digital technology required for business 3. Level of ability to master the use of digital technology more optimally 4. Level of ability to describe digital technology with its shortcomings.
2.	<p>Human capital competitiveness (Y) It is the value of human capital inherently dependent on its potential to contribute to a company's competitive advantage or core competence. (Baron & Armstrong, 2007)</p>	1. Talent	<ol style="list-style-type: none"> 1. Engagement 2. Commitment 	<ol style="list-style-type: none"> 1. Level of ability to run a business with the basic capabilities possessed 2. The level of interest in the business being undertaken 3. Ability level in running a business according to interest 4. Level of ability to commit to work
		2. Excellent performance	<ol style="list-style-type: none"> 1. work achievements exceed standards, 2. personal aspects of understanding job characteristics, 3. Strong environmental support 	<ol style="list-style-type: none"> 1. The level of ability to work exceeds the standards set 2. Level of ability to understand job characteristics well 3. Level of ability to work with the support of a conducive environment 4. Level of ability to work although not supported by a conducive environment
		3. Productivity	<ol style="list-style-type: none"> 1. Workability 2. Improve the results achieved 3. Spirit at work 4. Self-development 5. Quality 6. Efficiency 	<ol style="list-style-type: none"> 1. Level of ability to do the best in the job 2. Level of ability to produce better work with optimal effort made 3. Level of ability to always be enthusiastic at work 4. Level of ability to continue learning in improving self-quality 5. Level of ability to continue learning in increasing self-development 6. Level of ability to improve the quality of work 7. Level of ability to make the best use of time at work 8. Level of ability to streamline time to produce work
		4. Flexibility	<ol style="list-style-type: none"> 1. Providing different and logical solutions 2. Changes in approach when responding to commands 	<ol style="list-style-type: none"> 1. Level of ability to complete different jobs at one time 2. Ability levels easily adjust to newly assigned jobs 3. Level of ability to move work on something logical 4. Level of ability to respond to changing commands
		5. Innovation	<ol style="list-style-type: none"> 1. Product innovation 2. Process 	<ol style="list-style-type: none"> 1. Level of ability to take time to come up with new ideas 2. The level of courage to take risks to innovate according to market demand 3. The level of ability to experiment with something new

		6. Personal services.	1. service based on a friendly attitude 2. service based on attention 3. action-based service	1. Level of ability to serve with a smile, greeting, greeting, courtesy, and courtesy (5S) at work 2. Level of ability to listen and understand customer needs 3. Level of ability to focus on customers and work 4. Level of ability to record needs in jobs and customers
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The following Figure 1 describes the relationship between digital competence and competitiveness.

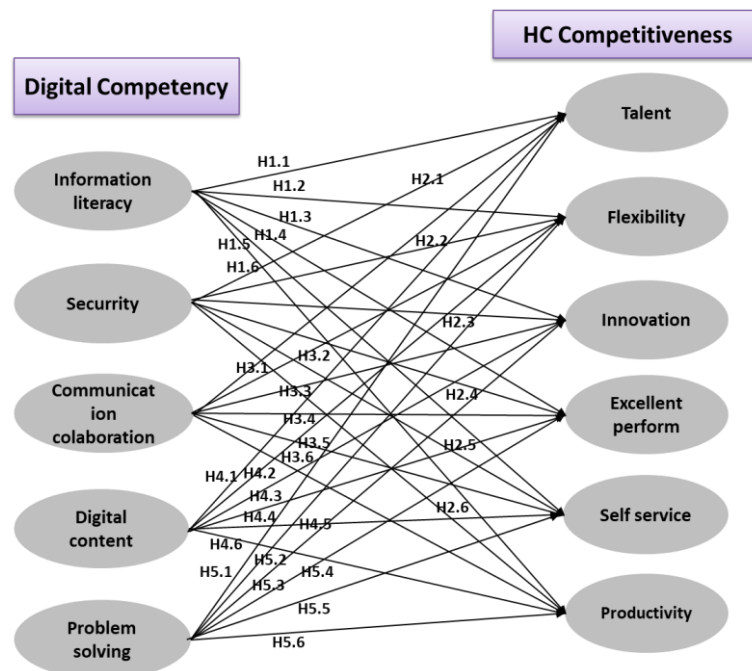


Figure 1 – Research Model. Source: own research

The model in Fig. 1 was calculated using the Smart PLS Version 3 software with the second-order model, the two-step approach, and the disjoint two-stage approach method (Sarstedt et al., 2019). The model in Fig. 1 is a calculation at the first stage by connecting sub-variables (Table 7). Stage 2 produces the effect of the combined X and Y variables from all indicators (Table 8).

Based on what has been described, we propose a hypothesis: digital competency has a positive effect on human capital competitiveness.

- H1.1: information literacy has a positive effect on talent
- H1.2: information literacy has a positive effect on flexibility
- H1.3: information literacy has a positive effect on innovation
- H1.4: information literacy has a positive effect on superior performance
- H1.5: information literacy has a positive effect on personal service
- H1.6: information literacy has a positive effect on productivity
- H2.1: security has a positive effect on talent
- H2.2: security has a positive effect on flexibility
- H2.3: security has a positive effect on innovation
- H2.4: security has a positive effect on superior performance
- H2.5: security has a positive effect on personal service

- H2.6: security has a positive effect on productivity
- H3.1: communication has a positive effect on collaboration on talent
- H3.2: communication has a positive effect on collaboration on flexibility
- H3.3: communication has a positive effect on collaboration on innovation
- H3.4: communication has a positive effect on collaboration on superior performance
- H3.5: communication has a positive effect on collaboration on personal service
- H3.6: communication has a positive effect on collaboration on productivity
- H4.1: digital content has a positive effect on talent
- H4.2: digital content has a positive effect on flexibility
- H4.3: digital content has a positive effect on innovation
- H4.4: digital content has a positive effect on superior performance
- H4.5: digital content has a positive effect on personal service
- H4.6: digital content has a positive effect on productivity
- H5.1: problem-solving has a positive effect on talent
- H5.2: problem-solving has a positive effect on flexibility
- H5.3: problem-solving has a positive effect on innovation
- H5.4: problem-solving has a positive effect on superior performance
- H5.5: problem-solving has a positive effect on personal service
- H5.6: problem-solving has a positive effect on productivity

3 RESEARCH OBJECTIVE, METHODOLOGY, AND DATA

This research approach is quantitative, so as to measure behavior and opinions/attitudes that can answer questions related to the given questionnaire (Cooper & Schindler, 2014). The objects of this study are digital competence (X) and human capital competitiveness (Y). The subject is creative craft industry entrepreneurs in West Java. The selection was based on the consideration that West Java is one of the highest creative economy export-producing provinces in Indonesia (Bekraf, 2019), as business entrepreneurs are considered to be able to understand the importance of competitiveness in the internationalization of business. Even so, creative industry entrepreneurs are still having problems carrying out the digitalization process in response to dynamic environmental changes through technology (Yusuf, 2022). The data source is primary data from internal documents of the Indonesian Ministry of Industry and Trade (Disperindag), with a population of 2,353 craft creative industry businesses.

With a sample size based on the strength of the statistical test (80%), Hair et al. (2021) stated that a large sample size in PLS can increase the precision or consistency of the results of the PLS parameter estimate (Yamin, 2021). Table 2 shows the sample size with a test power of 80% (Hair et al., 2021).

Tab 2 – Minimum sample sizes. Source: (Hair et al., 2021)

Pmin	Significance Level		
	1%	5%	10%
0.05–0.1	1004	619	451
0.11–0.2	251	155	113
0.21–0.3	112	69	51
0.31–0.4	63	39	29
0.41–0.5	41	25	19

Respondents were divided proportionally into 12 cities representing clusters. Thus, a representative sample has a maximum business capability of IDR 300,000,000 and is registered with the Department of Industry and Trade (Disperindag) of Indonesia. 400 questionnaires were

distributed directly by the researchers to creative craft economy entrepreneurs while participating in the International Handicraft Trade Fair (INACRAFT) on 23-27 March 2022 at the Jakarta Convention Center. On that occasion, entrepreneurs and creative craft industry teams were present representing cities in Indonesia and internationally. We successfully collected 362 questionnaires, 352 of which met the criteria, surpassing the minimum requirement.. This study uses a 7-point Likert scale, designed to measure attitudes. A 7-point Likert scale can minimize measurement errors and is more precise, ranging from strongly disagree to strongly agree (Munshi, 2014). Weights 1 to 7 indicate the level of attitude. Score 1 indicates strongly disagree, while score 7 is strongly agree. The digital competency variable has 5 sub-variables, and each sub-variable has 2-3 indicators, for a total of 17 digital competency indicators. The human capital competitiveness variable consists of 6 sub-variables with a total of 18 indicators. So the total sub-variables in this study are 11 sub-variables and 35 indicators. All indicators are measured by 52 questions (Table 1).

The research method uses description and verification, using a descriptive explanatory survey. The tools in the verification analysis in this study are using SEM (Structural Equation Modeling), operating using the SmartPLS Version 3 software with the second order model, the two-step approach, and the disjoint two-stage approach method (Sarstedt et al., 2019). In this study, SEM-PLS was the suitable choice of method. It aligned with the research objective, which is to analyze the impact of digital competency on human capital competitiveness through exploration and prediction. The following are the characteristics of the respondents who participated in the study.

Tab 3 – Respondent Characteristics. Source: own research

Criteria	Respondent	Frequency	Percent
Place of business	Tasikmalaya	78	22.2
	Garut	71	20.2
	Bogor	63	17.9
	Bandung	61	17.3
	Distric Bandung	28	8
	Purwakarta	13	3.7
	Cirebon	13	3.7
	West Bandung	11	3.1
	Sumedang	6	1.7
	Bekasi	2	0.6
	Bogor City	2	0.6
	Cimahi	4	1.1
Gender	Male	239	67.9
	Female	113	32.1
Education	High school	206	58.5
	Associate degree	41	11.6
	Bachelor's degree	97	27.6
	Postgraduate	8	2.3
Age	18-24 years old	46	13.1
	25-35 years old	179	50.9
	36-45 years old	127	36.1
Length of business	0-3 years	63	17.9

	4-5 years	186	52.8
	6-10 years	70	19.9
	> 10 years	33	9.4
Revenue turnover	< 5000.000	61	17.3
	5.000.000- 20.000.000	151	42.9
	20.000.000 -50.000.000	102	29
	50.000.000 - 100.000.000	31	9
	100.000.000 - 300.000.000	7	2

Based on Table 3, the highest number of respondents was from Tasikmalaya at 22.2%. The respondents were mostly male with a secondary education background. The majority of them were in the age range of 25-35 years old, and have been involved in the creative craft industry for 4-5 years. In terms of turnover, most respondents reported earning between 5 million to 20 million Rupiah (15,000IR=1US\$).

4 RESULTS AND DISCUSSION

4.1 RESULTS

This section will present the descriptive and confirmatory analysis results based on the collected questionnaire.

4.1.1 Descriptive results of craft creative industry entrepreneurs in West Java, Indonesia

Descriptive results provide an objective summary and presentation of data regarding the characteristics of the studied sample, which is the creative craft industry entrepreneurs in West Java. The results of the respondents' responses describe the descriptive situation regarding digital competence and the competitiveness of human capital in the creative craft industry in West Java, Indonesia. The results of the descriptive analysis are presented in a frequency distribution by calculating the number of measurements obtained and then comparing them with the maximum score to get the percentage of acquisition in each indicator in each dimension of the analyzed research variable. Then, the results of the analysis will be grouped into three categories (low, medium, and high). The classification is performed as follows:

1. The study utilized a 7-point numerical scale with 352 respondents as the units of analysis. To determine the minimum score, the lowest score was multiplied by the number of respondents, resulting in a minimum value of $1 \times 352 = 352$. Similarly, the maximum score was obtained by multiplying the highest score by the number of respondents, which gave a value of $7 \times 352 = 2464$.
2. Following the determination of the minimum and maximum scores, the range of data can be calculated by subtracting the minimum score from the maximum score. In this case, the range is 2112, which is obtained by subtracting 352 from 2464.
3. The range of the data obtained is grouped into three categories (low, medium, and high) with an interval of $2112/3 = 704$ for each category. The calculation results are compiled into a frequency distribution table, as shown in Table 4.2

Tab 4 – Category Milestones in Responses. Source: own research

No	Interval Score	Interval Percentase (%)	Category
1	352–1055	14.28–42.80	low
2	1056–1759	42.81–71.37	medium
3	1760–2464	71.38–100.00	high

Table 4 becomes the basis for determining the conclusions of responses.

4. After obtaining the category of achievement measurements, then a descriptive analysis is carried out, and the grouping of responses from respondents related to the measurement of each indicator in the dimensions of each variable measured. The analysis is conducted to expand empirical findings and enhance human resources in the creative craft industry, which serves as the research unit.

Tab 5 – Recapitulation of Responses of West Java Craft Creative Industry Entrepreneurs. Source: own research

	% achievements	Categories
Digital Competence		
Information & data literacy	73.34	high
Communication & collaboration	73.05	high
Digital content	70.66	medium
Digital security	52.17	medium
Problem-solving	72.08	high
Total	68.26	medium
Human Capital Competitiveness		
Talents	76.20	high
Superior performance	74.55	high
Productivity	76.35	high
Flexibility	74.01	high
Innovations	74.68	high
Service	76.38	high
Total	75.36	high

Overall, Table 5 shows that digital competency and human capital competitiveness have been effectively incorporated by creative craft industry entrepreneurs in West Java. In terms of digital competency, they still have much to learn, as their technological proficiency is categorized as moderate at 68%, compared to a high level of human capital competitiveness at 75%. They are already able to effectively search for information, with a score of 73%, compared to only 52% for their proficiency in digital security. The average human capital competitiveness of the West Java craft industry is included in the high category, namely 75.36%. The productivity indicator provides the highest boost of 76.35%, and the flexibility indicator for new achievements is 74.01%.

4.1.2 Verification results of craft creative industry entrepreneurs in West Java, Indonesia

Verificative results present hypothesis testing based on the collected data, indicating the relationship between research variables and examining the validity of the claims proposed in the study.

This study employed a two-stage approach involving separate phases. According to Sarstedt et al. (2019), it has been discovered that models incorporating reflection can be estimated using a method called the disjoint two-stage approach. The first stage focused on the initial process, where the measurement of each sub-variable was directly linked to all other sub-variables based on the constructed research model. The goal is to produce latent variable scores. Evaluation of the first-order process measurement model is carried out at this stage. Furthermore, in the

second stage, the score of the latent variable is used as an indicator/dimensional variable that is connected to other variables (Sarstedt et al., 2019).

The evaluation of measurement models is divided into 2 stages. The first stage concerns making connections between dimensions to see all relationships based on the model, to take latent variables. The second stage concerns connecting variables with connecting latent variables to determine the feasibility of the relationship.

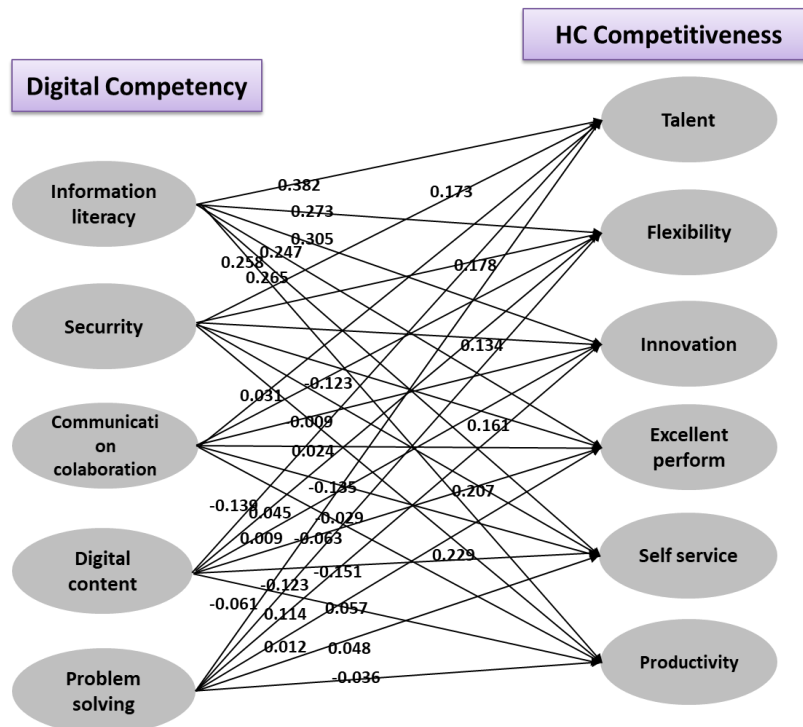


Fig 2 – Smart PLS3 Analysis Results. Source: own research

The results of the calculations in Fig 2 can be summarized clearly in Table 7. The results of the evaluation of the measurement and structural models show that the verification analysis process is acceptable with the predetermined criteria. The model's validity was assessed using average variance extract (AVE), while the model's reliability was evaluated using convergent reliability (CR). The CR value was above the threshold of 0.7 recommended by (Fornell & Larcker, 1981), while the AVE was above the threshold of 0.5 recommended by Hair et al. (2021) (Yamin, 2021). Therefore, there is a good level of confidence that the trait is well-measured by the indicator. The results of the validity and reliability are presented in Table 6.

Tab 6 – Loading Factor, Composite Reliability (CR) dan Average Variance Extracted (AVE)

Variable	Sub Variable	(O)	(M)	STDEV	(O/STD EV)	P	C-Alpha	CR	AVE
Dig Competency	Inform literacy	0.850	0.847	0.024	35.699	0.000	0.906	0.930	0.727
	Security	0.833	0.832	0.028	30.279	0.000			
	Comm & colab	0.915	0.913	0.013	69.915	0.000			
	Dig Content	0.811	0.805	0.033	24.324	0.000			
	Problem-Solv	0.849	0.844	0.025	34.253	0.000			
HC Competitiveness	Talent	0.839	0.838	0.021	39.449	0.000	0.909	0.930	0.688
	Flexibility	0.789	0.783	0.036	21.868	0.000			
	Innovation	0.834	0.831	0.022	37.090	0.000			
	Excellent perform	0.806	0.803	0.027	29.932	0.000			

	Self-service	0.810	0.810	0.024	33.346	0.000			
	Productivity	0.895	0.894	0.014	62.961	0.000			

The discriminant validity aspect at the level of measurement items is fulfilled because it is higher than the other correlations. HTMT indicates that the maximum value is 0.486, which is below 0.90, indicating good discriminant validity of the variables. Inner VIF or multicollinearity examination between variables shows that the VIF value of 1.818 is below 5, indicating that the symptoms of multicollinearity can be ignored.

These results illustrate the state of digital competence of West Java's craft creative industry entrepreneurs. They have only managed to master information literacy, only a little ability to master security as well as digital content in developing a business. Digital competencies in the form of communication and collaboration are still low due to the great concern of entrepreneurs being defeated in industry, so there is no openness in communication and collaboration with business partners. Digital competence in technological problem-solving also cannot be mastered because solving technological problems requires special education, while the majority of the education of entrepreneurs in the creative craft industry is still not high. This situation reflects the growth of the creative craft industry in developing countries, which may be different if explored in other more developed countries.

4.2 DISCUSSIONS

The discussion section will present the interpretation of both the descriptive and confirmatory analysis results.

4.2.1 Descriptive Analysis of Digital Competency and Human Capital Competitiveness

The discussion based on the descriptive analysis results presents a summary of the findings from the descriptive research.

The findings showed that the creative industry entrepreneurs around the West Java region have sufficient information and data literacy skills, yet they have not been able to use the skills for executive functioning such as decision-making. It is noted that low literacy skills are the primary cause. Regarding communication and collaboration skills that may impact business partnerships, it is found that the participants are not able to perform adequately due to a lack of self-confidence. The communication and collaboration factor is in the medium category of digital competency of craft creative industry entrepreneurs.

The next aspect is the digital content competency of craft creative industry entrepreneurs. The digital content dimension of their achievement is also still in the medium category. They understand copyright and license management, yet they encounter challenges in effectively developing highly creative and innovative products. This limitation arises from the untapped potential of their imagination, which has yet to be optimally explored.

In the security aspect, they can maintain electronic equipment properly but have not yet reached the ability to protect data confidentiality. This is because some of them are not qualified in the field of science. As for the dimensions of overcoming the problem, they can use digital technology for business, and they are still having difficulties if the problem is related to overcoming the problem of technological devices. This limitation stems from their inadequate proficiency in these specific areas, as such skills demand specialized abilities. To address these gaps, continuous learning is necessary to enhance their mastery of digital competence. Additionally, they would benefit from training programs aimed at improving their operational skills in the digital realm.

The competitiveness of human capital in the talent dimension is reflected in the effectiveness that they can commit to their work. This means that they can endure hardship and are prepared. However, some of them run a creative craft industry that does not match their interests. From interviews with several entrepreneurs in the regions, it is because most of them continue from family businesses and have no choice but to continue. In the dimension of excellent performance, they feel capable of working beyond the specified standards. The disadvantage is that they cannot work in an environment that is not conducive. This is due to a lack of experience and creativity, which may be because most of them are those whose working period is less than 10 years, so they are still in learning. In the productivity dimension, they do good work, but they often forget to improve themselves.

They are so focused on seeing income based on the quantity of work that they find it difficult to allocate time to improve and develop themselves. Self-development, if done well, will be a reinforcing factor to earn a higher income. Awareness of learning has not increased in some of them. They assume that learning is only done in school, and if you are already employed, there is no longer a need for further learning activities. In the dimension of flexibility, they can complete different jobs at one time. However, they still find it difficult to adjust to a new job because they are out of the habit. This difficulty can be seen in their lack of adopting new ideas.

In the innovation dimension, they can take the time to get new ideas, but their courage in taking risks when the market asks for change is not so strong. Lack of courage in taking risks is natural, because the creative craft industry entrepreneurs do not want to lose. Moreover, they are newcomers who mostly run businesses between 5-10 years. But, with time and increasing experience, it can be overcome. In the service dimension, they can serve customers with a friendly approach, but they have not been able to devote their whole heart to customers and work. They need increased training that can make them more qualified. Self-development through education must continue to be improved, especially in increasing income through digitalization technology and increasing competitiveness.

4.2.2 Verification Analysis of Human Capital Competitiveness

The discussion based on the verificative analysis results will address the recapitulation of findings, comparisons with previous research, and influential factors derived from statistical interpretation.

The following are the results of each hypothesis that analyzes the relationship between sub-variables based on the research model Fig-2, using SmartPLS3.

Tab. 7 – Hypothesis Results of Digital Competencies on Human Capital Competitiveness.

Source: own research

Hypothesis	Relationship between sub-variables	Original Sample (O)	T Stat (O/ST DEV)	P Values	Conclusion
H1.1	Inform literacy -> Talent	0.382	5.328	0.000	Affected
H1.2	Inform literacy -> Flexibility	0.273	2.382	0.018	Affected
H1.3	Inform literacy -> Innovation	0.305	3.467	0.001	Affected
H1.4	Inform literacy -> Excellent perform	0.247	2.686	0.007	Affected
H1.5	Inform literacy -> Self-service	0.258	2.732	0.007	Affected
H1.6	Inform literacy -> Productivity	0.265	2.863	0.004	Affected
H2.1	Security -> Talent	0.173	2.108	0.036	Affected
H2.2	Security -> Flexibility	0.178	2.123	0.034	Affected
H2.3	Security -> Innovation	0.134	1.991	0.047	Affected
H2.4	Security -> Excellent perform	0.161	1.832	0.067	No effect

H2.5	Security -> Self-service	0.207	2.631	0.009	Affected
H2.6	Security -> Productivity	0.229	2.681	0.008	Affected
H3.1	Comm & colab -> Talent	0.031	0.365	0.715	No effect
H3.2	Comm & colab -> Flexibility	-0.123	1.154	0.249	No effect
H3.3	Comm & colab -> Innovation	-0.009	0.105	0.916	No effect
H3.4	Comm & colab -> Excellent perform	0.024	0.233	0.816	No effect
H3.5	Comm & colab -> Self service	-0.135	1.511	0.131	No effect
H3.6	Comm & colab -> Productivity	-0.029	0.309	0.758	No effect
H4.1	Dig Content -> Talent	0.139	2.373	0.018	Affected
H4.2	Dig Content -> Flexibility	0.045	0.629	0.529	No effect
H4.3	Dig Content -> Innovation	0.009	0.146	0.884	No effect
H4.4	Dig Content -> Excellent perform	-0.063	0.858	0.391	No effect
H4.5	Dig Content -> Self-service	-0.151	2.197	0.029	Affected
H4.6	Dig Content -> Productivity	-0.123	1.998	0.046	Affected
H5.1	Problem-Solv -> Talent	-0.061	0.849	0.396	No effect
H5.2	Problem-Solv -> Flexibility	0.114	1.663	0.097	No effect
H5.3	Problem-Solv -> Innovation	0.057	0.859	0.391	No effect
H5.4	Problem-Solv -> Excellent perform	0.012	0.168	0.867	No effect
H5.5	Problem-Solv -> Self-service	0.048	0.644	0.520	No effect
H5.6	Problem-Solv -> Productivity	-0.036	0.497	0.620	No effect

Table 7 presents the results of the PLS stage/step 1 calculation that connects the sub-variables. Table 7 shows that information literacy has positively affected human capital competitiveness. Security has a positive effect on human capital except for superior performance. Digital content only affects talent, personal service, and productivity. Communication and collaboration, and problem-solving do not influence human capital competitiveness. The results that do not affect human capital competitiveness indicate that the digital competence of existing internal resources is not optimal. This should be a consideration for entrepreneurs in the future. When recruiting employees, it is better to recruit those with qualified knowledge so that they can reduce their shortcomings (Chalikias et al., 2014).

The relationship between the digital competence variable and the human capital competitiveness variable in the creative craft industry in West Java will be explained and described in more detail by the relationship between dimensions (sub-variables).

1 Information and Data Literacy

Table 7 shows human capital competitiveness has a significant positive effect. The average information support and data literacy of craft creative industry entrepreneurs in West Java are high. They are already able to find information and data for business development. The test results prove that information and data literacy can increase the competitiveness of human capital, be it talent, innovation, flexibility, productivity, service, and superior performance. The ability to manage information and data literacy can be a driving force in developing human capital competitiveness, especially in sharpening talents, with a score of 38% being the highest. For excellent performance competitiveness, the use of literacy contributes the least, with only 25%.

In the information search and data literacy stages, there is learning that makes craft creative industry entrepreneurs able to process data so that it becomes the right decision. This is confirmed by finding information, and data literacy makes it easier for a person to hone their talents, (Malik et al., 2021; Chirumalla, 2021) so that they are more flexible at work, (Matarazzo et al., 2021) and their service is better. Then, if information and data literacy can be properly carried out by craft creative industry entrepreneurs in West Java, innovation will develop (Tortora et al., 2021), which will eventually result in improved performance (Zenita et

al., 2015). Based on the information literacy hypothesis group, it is concluded that the entrepreneurs in the creative industry of handicrafts must maintain their digital competency in information literacy to improve human capital competitiveness for business development.

2 Security

As Table 7 shows, the security dimension to the dimensions of human capital competitiveness has a high influence. The average security support for craft creative industry entrepreneurs in West Java is high. They have been able to protect the confidentiality of data. The test results prove that security can increase the competitiveness of human capital except for superior performance dimensions. Security can provide flexibility at work so that comfortable work is strengthened (Chirumalla, 2021). If the ability to secure data increases, talent will be honed, innovation will emerge, and flexibility, productivity, and service will continue to increase. This happens because when creative craft industry entrepreneurs can properly maintain electronic equipment it will create a conducive learning environment. After all, they can maintain data confidentiality. So, they will work quietly, comfortably, and measuredly. However, the effectiveness of this security does not provide convenience to their performance, meaning that superior performance is not determined by the level of security, but is determined by work that exceeds standards and time effectiveness. Based on the digital security hypothesis group, entrepreneurs in the creative industry of handicrafts have not been able to prioritize digital security for excellent performance. This needs to be improved as their work results require secure storage.

3 Communication and Collaboration

Based on Table 7, craft creative industry entrepreneurs in West Java are already able to communicate and collaborate, but they have not yet established a shared vision and mission, nor have they cooperated in using digital technology for business purposes. The test results prove that communication and collaboration do not affect human capital competitiveness. This result is different from (Chirumalla, 2021) has demonstrated that communication and collaboration can facilitate flexibility in work, and improve services by adapting to individuals' abilities (Grewal et al., 2022), leading to the emergence of innovation (Johnson, 2022; Tortora et al., 2021) and ultimately achieving superior performance (Blichfeldt & Faullant, 2021).

The results of the current study are not significant. This happens to human capital in the creative craft industry because, for them, too much communication and collaboration will waste time for work, so the set standards are missed. They prefer communication that is simple and not deep as occurs in coordination. This situation conflicts with communication and collaboration, which can increase competitiveness accordingly (Matarazzo et al., 2021).

4 Digital content

As Table 7 shows, human capital competitiveness does not have a positive effect, but may have a negative effect or no effect. This negative influence is shown by digital content on personal service -15%, then digital content on talent -13%, and digital content on productivity -12%. As for the dimensions of digital content on flexibility, digital content on innovation and digital content on superior performance have no effect.

The average digital content support for craft creative industry entrepreneurs in West Java is moderate. They have not been able to develop digital products for business purposes. The test results prove that digital content harms the competitiveness of human capital, namely on personal service, talent, and productivity. Even though the results of previous studies indicated that digitization can make work more flexible (Americo et al., 2022; Chirumalla, 2021; Khan & Tao, 2022) so that services can be easily adjusted (Paiola et al., 2021; Wiktor & Kosmowska, 2021). Then, it is also proven that digitalization increases innovation (Blichfeldt & Faullant,

2021; Tortora et al., 2021) resulting in optimal productivity (Tramontano et al., 2021) and superior performance (Blichfeldt & Faullant, 2021).

Research indicates that digital content plays a significant role in the development of individual talents. However, digital content has not directly improved the quality of services. Digital content can only be utilized to sharpen existing talents. In West Java, practitioners in the creative craft industry can enhance their talents through digital content, thereby enhancing the competitiveness of human resources. However, in reality, their proficiency in digital content is very limited. Digital content has not yet influenced other dimensions of human capital's competitiveness, such as flexibility, performance, service, and productivity. Based on these findings, it is advisable for practitioners in the craft creative industry not to learn digital content themselves, if it will only decrease productivity and service quality. It is better to leave digital content to the experts so that practitioners in the creative industry can focus on other dimensions of competitiveness that they have proven capable of achieving.

5 Problem-Solving

Table 7 shows that the dimensions of overcoming problems do not have a significant positive effect on all dimensions of human capital competitiveness, be it talent, flexibility, innovation, superior performance, personal service, or productivity. The average support for addressing the problems of craft creative industry entrepreneurs in West Java is high. They can operate electronics but cannot describe the problems that occur. The test results prove that overcoming problems in digitalization technology does not affect the increase in the competitiveness of human capital. If it is related to the ability to solve problems by describing digital technology, they cannot yet do it; of course, the competitiveness of human capital cannot be achieved either. This is the reason why overcoming the problems here does not affect the competitiveness of human capital.

The following presents a summary of the effect of digital competence on human capital competitiveness, based on the results of Smart PLS 3 data processing.

Tab.8 - Research Hypothesis Summary. Source: own research

Hypothesis	Connection	Coefficient	p-values	Conclusion
H1	Digital Competency → Competitiveness	0.318	0.001	H0: rejected
	Human capital			Ha: accepted

Given that this study adopts a second-order model, a two-step approach utilizing the disjointed two-stage approach method was employed. In the first stage, the establishment of relationships among the sub-variables was achieved (see Table 7). Subsequently, the second stage involved the application of PLS3 calculations to establish connections among the variables (see Table 8). Consistent with the research objective of examining the impact of digital competency on human capital competitiveness, the overall findings of the second stage calculations support the acceptance of the hypothesis, indicating a significant impact of digital competency on human capital competitiveness.

This verifiable evidence highlights that digital competency has a substantial influence on human capital competitiveness, accounting for 32% of the original sample ($\beta = 0.318$), with a p-value of $0.001 < 0.05$ (see Table 8), and a t-statistic of $4.488 > 1.96$. Consequently, the hypothesis is accepted, suggesting that a 100% increase in digital competency will result in a 32% increase in human capital competitiveness.

Digital competence can contribute to human capital competitiveness in general. Digital security competency currently does not demonstrate an impact on performance excellence, while

communication and collaboration do not directly influence human capital competitiveness. Conversely, digital content only affects talent. The lack of this impact indicates the state of human capital competitiveness in the creative craft industry in West Java. Practitioners in this industry have not fully achieved mastery of digital competency based on the proposed indicators, as the average level of digital competency remains at a medium level (see Table 5), thus impeding the realization of full competitiveness. The actual impact generated is only 32%. Therefore, further efforts in learning, mentoring, and research are necessary to enhance human capital competitiveness.

As a whole, it can be seen that the digital competence variables through the five new dimensions, three influential dimensions, namely data literacy information, security, and digital content, influence the competitiveness of human capital. The competitiveness of human capital in creative craft industry entrepreneurs will increase if digital competence is increased. This is confirmed by research that digital competence can increase competitiveness (Matarazzo et al., 2021).

The competitiveness of the human capital of West Java craft creative industry entrepreneurs in the digital era needs to be increased with the support of digital competencies in the form of information literacy, security, and digital content.

- a. The competitiveness of human capital in the form of talent, innovation, and flexibility can be increased by West Java creative industry entrepreneurs when they can properly improve information literacy.
- b. The competitiveness of human capital in the form of productivity and personal service can increase if the digital security of West Java creative industry entrepreneurs increases.
- c. The competitiveness of human capital in the form of talent and personal service can increase if digital content is increased by West Java craft creative industry entrepreneurs.

5 CONCLUSION

The competitiveness of human capital has been shown to be influenced by digital competence (see Table 8). In the digital era, creative craft industry entrepreneurs in West Java can enhance their competitiveness by improving their digital competence. Optimizing information literacy is the optimal choice for creative craft industry practitioners to enhance HCC. Similarly, having excellent security skills is highly beneficial for HCC; however, West Java craft industry entrepreneurs cannot rely solely on security to achieve superior performance (H2.4). Although digital competence has been effectively implemented at a moderate level (see Table 5), it is not yet effective for communication, collaboration, and problem-solving, as indicated by the limited impact on HCC (see Table 7). Moreover, the study found that digital content only affects talent. Therefore, it is crucial to enhance competitiveness by understanding and honing talent (see Table 7). West Java creative craft industry entrepreneurs must depend on creativity in digital content.

The implications regarding the interaction among research variables, aim to enhance the competitiveness of creative craft industry entrepreneurs in West Java.. These entrepreneurs face challenges in marketing and administration, particularly during the pandemic, because of their limited technological literacy skills. Therefore, developing digital competence becomes crucial in order to improve their capabilities and increase human capital competitiveness.

As far as research limitations are concerned, in the current study, researchers only chose 12 cities/districts in West Java to study.. It would be more representative if all district cities in West Java, Indonesia were sampled to see equity and make it easier to determine strategies.

Finally, as a recommendation, industry entrepreneurs must be able to continue to improve digital competence, especially security, communication, and collaboration capabilities, so they can achieve human capital competitiveness to develop businesses in the era of society 5.0.

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