


THE MEDIATING ROLE OF ABSORPTIVE CAPACITIES ON THE RELATIONSHIP OF HUMAN CAPITAL AND SOCIAL CAPITAL ON INNOVATION CAPABILITIES (STUDY ON WOMAN ENTREPREUNER IN NORTH SULAWESI, INDONESIA)

Tinneke Evie Meggy Sumual^A, Arie Frits Kawulur^B, Nikolas Fajar Wuryaningrat^C, Grace Jenny Sopotan^D



ARTICLE INFO	ABSTRACT
<p>Article history:</p> <p>Received 29 May 2023</p> <p>Accepted 22 August 2023</p>	<p>Purpose: The aim of this study is to examine the relationship between human capital and social capital on innovation capabilities mediated by absorptive capacities. The study was conducted on business in North Sulawesi Province, Indonesia managed by women entrepreneurs.</p>
<p>Keywords:</p> <p>Human Capital; Social Capital; Absorptive Capacities; Innovation Capabilities; Women Entrepreneurs.</p>	<p>Theoretical framework: The human capital, social capital and absorptive capacities are expected to be the causal relationship model to influence the business innovation ability of women entrepreneurs.</p>
	<p>Design/Methodology/Approach: The quantitative survey method was chosen to test the causal relationship established. This research was conducted in North Sulawesi, Indonesia. The 187 data collected were tested using PLS-SEM with the SmartPLS 3.29 application.</p> <p>Findings: The results of this study indicate that absorptive capacities significantly directly influence innovation capabilities. Absorptive capacities also mediate the relationship between human capital and innovation capabilities of business managed by women entrepreneurs in North Sulawesi.</p> <p>Research, practical & social implications: The study found the ability of business innovation managed by women entrepreneurs could develop if being supported by absorptive capacities. Absorptive capacities could become a significant mediating construct in the relationship between human capital and innovation capability due to the success of knowledge, abilities and skills to generate an innovation.</p> <p>Originality/Value: The causal relationship between human capital, social capital and absorptive capacities as mediating variables is not widely discussed in the entrepreneurship literature, especially for women entrepreneurs. Therefore, this is considered as novelty offered in this research.</p> <p>Doi: https://doi.org/10.26668/businessreview/2023.v8i8.2368</p>

^A Doctor in Education Management. Professor. Universitas Negeri Manado. Indonesia.

E-mail: tinnekesumual@unima.ac.id Orcid: <https://orcid.org/0000-0001-5368-7326>

^B Doctor in Economics. Professor. Universitas Negeri Manado. Indonesia. E-mail: ariekawulur@unima.ac.id Orcid: <https://orcid.org/0000-0001-5046-6800>

^C Doctor in Management. Associate Professor. Universitas Negeri Manado. Indonesia.

E-mail: nikolas.fajar@unima.ac.id Orcid: <https://orcid.org/0000-0003-4298-3001>

^D Doctor in Education Management. Associate Professor. Universitas Negeri Manado. Indonesia.

E-mail: gracesoputan@unima.ac.id Orcid: <https://orcid.org/0000-0003-3941-9223>

O PAPEL MEDIADOR DAS CAPACIDADES ABSORVENTES NA RELAÇÃO DO CAPITAL HUMANO E DO CAPITAL SOCIAL EM CAPACIDADES DE INOVAÇÃO (ESTUDO SOBRE A MULHER EMPREENDEDORA EM SULAWESI DO NORTE, INDONÉSIA)

RESUMO

Objetivo: O objetivo deste estudo é examinar a relação entre capital humano e capital social em capacidades de inovação mediadas por capacidades de absorção. O estudo foi realizado sobre negócios na província de Sulawesi do Norte, na Indonésia, gerenciado por mulheres empresárias.

Quadro teórico: Espera-se que o capital humano, o capital social e as capacidades de absorção sejam o modelo de relação causal para influenciar a capacidade de inovação empresarial das mulheres empresárias.

Design/Methodologia/Abordagem: O método de levantamento quantitativo foi escolhido para testar a relação causal estabelecida. Esta pesquisa foi realizada em Sulawesi do Norte, Indonésia. Os 187 dados coletados foram testados usando o PLS-SEM com o aplicativo SmartPLS 3.29.

Constatações: Os resultados deste estudo indicam que as capacidades de absorção influenciam significativamente diretamente as capacidades de inovação. As capacidades de absorção também mediam a relação entre o capital humano e as capacidades de inovação das empresas administradas por mulheres empresárias no Sulawesi do Norte.

Investigação, implicações práticas e sociais: O estudo descobriu que a capacidade de inovação empresarial gerida por mulheres empresárias poderia se desenvolver se fosse apoiada por capacidades absorptivas. As capacidades de absorção podem tornar-se uma construção mediadora significativa na relação entre o capital humano e a capacidade de inovação, devido ao sucesso dos conhecimentos, capacidades e competências para gerar uma inovação.

Originalidade/Valor: A relação causal entre capital humano, capital social e capacidades absorptivas como variáveis mediadoras não é amplamente discutida na literatura sobre empreendedorismo, especialmente para mulheres empresárias. Portanto, isso é considerado novidade nesta pesquisa.

Palavras-chave: Capital Humano, Capital Social, Capacidades de Absorção, Recursos de Inovação, Mulheres Empreendedoras.

EL PAPEL MEDIADOR DE LAS CAPACIDADES DE ABSORCIÓN EN LA RELACIÓN ENTRE EL CAPITAL HUMANO Y EL CAPITAL SOCIAL EN LAS CAPACIDADES DE INNOVACIÓN (ESTUDIO SOBRE LA MUJER EMPRESARIA EN SULAWESI DEL NORTE, INDONESIA)

RESUMEN

Objetivo: El objetivo de este estudio es examinar la relación entre capital humano y capital social en capacidades de innovación mediadas por capacidades de absorción. El estudio se llevó a cabo en la provincia de Sulawesi Septentrional (Indonesia), en una empresa dirigida por mujeres empresarias.

Marco teórico: Se espera que el capital humano, el capital social y las capacidades de absorción sean el modelo de relación causal que influya en la capacidad de innovación empresarial de las empresarias.

Diseño/Methodología/Enfoque: Se eligió el método de encuesta cuantitativa para probar la relación causal establecida. Esta investigación se llevó a cabo en Sulawesi del Norte, Indonesia. Los 187 datos recolectados fueron probados usando PLS-SEM con la aplicación SmartPLS 3.29.

Hallazgos: Los resultados de este estudio indican que las capacidades de absorción influyen de manera significativa y directa en las capacidades de innovación. Las capacidades de absorción también median en la relación entre el capital humano y las capacidades de innovación de las empresas gestionadas por mujeres empresarias en Sulawesi Septentrional.

Investigación, implicaciones prácticas y sociales: El estudio encontró que la capacidad de innovación empresarial gestionada por mujeres empresarias podría desarrollarse si estuviera apoyada por capacidades de absorción. Las capacidades de absorción podrían convertirse en un constructo mediador significativo en la relación entre capital humano y capacidad de innovación, debido al éxito de los conocimientos, habilidades y destrezas para generar una innovación.

Originalidad/Valor: La relación causal entre el capital humano, el capital social y las capacidades de absorción como variables mediadoras no se discute ampliamente en la literatura empresarial, especialmente para las mujeres empresarias. Por lo tanto, esto se considera como novedad ofrecida en esta investigación.

Palabras clave: Capital Humano, Capital Social, Capacidades de Absorción, Capacidades de Innovación, Mujeres Empresarias.

INTRODUCTION

In today's competitive business world, innovation is an essential requirement. Innovation is an effort by large or small companies to enhance sustainable competitiveness. (Johannessen et al., 2001; Tidd & Bessant, 2018). In many studies, innovation is the fruit of knowledge resources (Damanpour, 1991; Damanpour et al., 2018; Grant, 1996; Gumba et al., 2021; Nonaka & Reinmoeller, 2017; Nonaka & Toyama, 2015).. Knowledge as an intangible asset itself is embedded in humans (Szulanski, 1996), thus it can be termed that innovation is like healthy food for the human body (company) in order to stay healthy and strong.

Knowledge resources cannot be separated from human capital. Knowledge resources refer to the knowledge, information, experience and skills possessed by individuals and organizations (Davenport & Prusak, 1998; A. Srivastava et al., 2006; A. P. Srivastava & Joshi, 2018), while human capital itself refers to the skills, knowledge and expertise possessed by individuals in organizations (Shultz, 1996). According to the above opinion, it can be said that human capital itself cannot be separated from knowledge resources or it can even be said that people's capital to survive is their knowledge.

In addition to human capital, social capital can also drive organizational innovation. Social capital is defined as a form of network, values and understanding in society that can generate trust and cooperation in the organization (Lee & Law, 2017). In this case, the diffusion of innovation itself takes time, where social networks can support the diffusion process. The network in question is the knowledge sharing network. Knowledge transfer plays a role in facilitating knowledge creation in organizations, where high social networks encourage organizational innovation performance (Tsai, 2002). Thus, social capital is likely to be a factor in the level of innovation.

Then innovation is also related to the extent to which knowledge can be absorbed in humans which can then be implemented in the real form of innovation. Absorptive capacity (ACAP) is an opinion that explains that innovation can depend on a knowledge that can be applied such as the birth of product innovation, process or innovation in organizational management itself (Cohen & Levinthal, 1990; Damanpour et al., 2018). In previous research, ACAP itself is considered more appropriate to be a mediating effect, because without ACAP, the knowledge itself will not be able to provide real results (Lund Vinding, 2006; Pérez Sánchez et al., 2017; Wuryaningrat, 2013; Wuryaningrat et al., 2019).

Furthermore, innovation, performance and economic development could be predicted by human and social capital mediated by absorptive capacities. This was supported by several

studies that explained that human capital and social capital and absorptive capacities affect many things such as corporate innovation, economic development, organizational development (Ganguly et al., 2019; Linda et al., 2019).

However, some of the research that has been submitted have not discussed its relationship with entrepreneurship literature, especially specifically women entrepreneurs. In fact, woman entrepreneurs are now increasingly recognized for their role not only in improving the family economy but also to assist the government in efforts to expand employment opportunities and reduce the impact of crisis or poverty (Byrne et al., 2019). In Indonesia itself, the number of female population members is equal to the number of men (Statistik, 2022), thus the role of women naturally becomes stronger in various fields, including in complementing, the demands of family life including their role as entrepreneurs. It is undeniable that businesswomen are still often underestimated, which is referred to as the 'gender gap' (Kelley et al., 2017). Obstacles or barriers due to the socio-environment and cultural differences in Indonesia could be the reason (Anggadwita et al., 2017). Therefore, this study aims to examine the effect of human and social capital on the innovation ability of women entrepreneurs in North Sulawesi, Indonesia, mediated by ACAP.

LITERATURE REVIEW

This section describes the relevant literature review that connects several research variables. This relationship consists of a causal relationship between human capital, social capital, absorptive capacities and innovation ability in women entrepreneurs.

Recent Study in Women Entrepreneurs

In Indonesia, the number of men and women is only slightly different, Indonesian statistical data for 2022 states that the number of women is 135.75 million and men are 138.45 million, of the 135 million female population 69.08% are productive age population (Statistics, 2022). Then Micro, Small and Medium Enterprises (MSMEs) which are the backbone of the national economy because they have a contribution of 60.51 percent of GDP which in 2021 reached 64.2 million business actors, where 37 million MSMEs in Indonesia are managed by women, the ratio is even one of the best in the world (Liputan6.com, 2021). Therefore, the existence of women has a role that can not be underestimated in its participation to drive the Indonesian economy. The motivation for businesswomen is usually due to economic needs, the desire to be more independent or at least to support family finances. For instance, Dayak women

are entrepreneurial because they are encouraged to increase the family economy and preserve their culture (Fauziah et al., 2023).

In scholarly publications, women entrepreneurs' is also one of the topics that are widely discussed. Using the Publish or Perish 8.0 application in 2022 until the beginning of 2023 in the Scopus database was found to a maximum limit of 200 papers, which means that the number of articles with the topic of women entrepreneurs' in just one year is more than 200 papers. For instance, women in Spain who have masculine gender-role orientation are more likely to develop entrepreneurial careers (Liñán et al., 2022). Then women entrepreneurs in Pakistan are proven to contribute significantly to supporting the family economy during COVID-19 (Ge et al., 2022).

The factors that determine the success of women entrepreneurs are determination, education, entrepreneurial resilience, personal satisfaction and provide employment (Agarwal, 2022) and socio-environment (Anggadwita et al., 2017), and one of the factors that is included in the high category is education (Agarwal, 2022). Besides education, human capital and social capital also influence women's empowerment and sustainable business growth (Dong & Khan, 2023).

Innovation Capabilities

Innovation is the key to improve a company's competitiveness in a challenging market. Companies capable of creating and developing distinctive and valuable innovations will have a significant advantage over their competitors (Johannessen et al., 2001). The innovation could be done in various aspects of the company, such as product, production process, marketing, and management. Innovation can be defined as a new idea, practice or object that is considered as acceptance by a group of relevant individuals at a certain time and place (Damanpour, 1991; Damanpour et al., 2018). The new in question is more in the form of newness than actually newly created (Johannessen et al., 2001).

In this definition, innovation is viewed as something new and has never been done before, and needs to be accepted by a group of relevant individuals. Innovations could be new ideas, new practices, or new objects such as products or services that have never existed before as a result of development. However, innovation is not only about creating new things, but also about the adoption and application of new ideas, practices, or objects that already exist elsewhere, in other words, what is new in one company may be considered old in another company (Gumba et al., 2021; Tidd & Bessant, 2018). Innovation must also be accepted by a

group of relevant individuals, since without acceptance from influential people in a field, innovation will have little or or no impact, which is referred to as innovation diffusion. Innovation and entrepreneurship have a close relationship, as both are key factors in business success (Suciu et al., 2018). Entrepreneurship involves taking risks and creating new opportunities in the market, while innovation involves creating something new and different from what already exists. Innovation Capabilities

Absorptive Capacity and Innovation

Absorptive capacity determines the increase in innovation (Chen et al., 2009; Cohen & Levinthal, 1990). The original concept of absorptive capacity is the ability of a firm to recognize new value and external information, assimilate it and apply it to the firm's goals (Cohen & Levinthal, 1990). The literature on absorptive capacity continues to evolve by disaggregating it as an asset and a capability. As an asset it relates to intangible resources (invisible assets), knowledge base and an extension of prior knowledge. As a capability, it is directed towards the process and dynamic learning capability. Another view divides absorptive capacity as the ability and the motivation to learn (Liao et al., 2007). Knowledge Intensive Business Sector (KIBS) research on absorptive capacity and innovation found that in the manufacturing sector access to knowledge from business partners (external knowledge) is very helpful in completing incremental and radical innovations (Tidd & Bessant, 2021). Research on 221 small and medium-sized industries in Germany proves that absorptive capacity with indicators of acquisition, assimilation, transformation, exploitation of knowledge allows companies to engage in exploratory and exploitative innovation strategies (Ebrahimi Mehrabani & Shajari, 2012; Tidd & Bessant, 2018).

An entrepreneur who has absorptive capacity will be able to make changes in thinking, dynamic work adaptation, creative and innovative. Conversely, an entrepreneur who is weak in absorptive capacity will face difficulties in making adaptations, changes and developments towards business progress. A strong level of absorptive capacity of an entrepreneur will make it easier for him to innovate in his work. Absorptive capacity in this paper highlights the ability of a female entrepreneur to acquire new information and external knowledge, assimilate and apply it to innovate in her business.

Human Capital, Absorptive Capacity and Innovation

The power of human capital is strategic in business management as well as a strategic source of innovation and renewal for the organization in the form of intelligence, as well as explicit and implicit knowledge that will provide value to the organization. In a company, human capital includes knowledge and skills of professionals to produce a professional service (Linda et al., 2019; Luthans et al., 2006), it can also take the form of creativity, knowledge and idea development skills (Liu et al., 2017; Zhou, 2003). Basically, human capital is the profile of human resources that have added value to the organization. Human capital itself has proved beneficial to entrepreneurial competence. For instance, human capital factor plays an important role in the success of culinary entrepreneurs in Manado city in establishing their business (Sumual et al., 2019). In addition, the role of human capital enhances the possibility of developing business efforts, including informal business (Sumual, Sopotan, et al., 2020).

Human capital in this research could be considered as a set of capital owned by entrepreneurs in the form of education, knowledge, experience, entrepreneurial skills which could value-added to work innovation in the form of products and marketing. Others studies have related how the level of education as a dimension of human capital also influences a higher increase in absorptive capacity (Gray, 2006). The high and low relationship between human capital and innovation is also influenced by absorptive capacity (Liu et al., 2017; Sumual, Soputa, et al., 2020).

Social Capital, Absorptive Capacity and Innovation

The topic of social capital was originally discussed at the national level in the form of informal norms such as the cooperation of two or more individuals as well as a product of religion, tradition, shared historical experiences and other types of cultural norms. Social capital exists in society, in public and business organizations and it is an important asset in the form of social relations and associability (Chang & Hsu, 2016; De Silva et al., 2006; Ganguly et al., 2019; Lee & Law, 2017)., in the form of organizational bonding, regional bridging, personal creativity, also characterized by (Aribi & Dupouët, 2015). Social capital is an asset in the form of social relations and networks (Leana & Van Buren, 1999), while other authors have discussed it from structural aspects (net work ties, net work configuration, net work stability), cognitive aspects (shared goals and shared culture) and trust (Inkpen & Tsang, 2005). The study of social capital from the aspect of social net work is an important source to improve the firm's innovation performance moderated by absorptive capacity (Yu, 2013).

Some researchers recommend that social capital has optimized organizational goals such as business performance (Micheels & Nolan, 2016), organizational performance (Dess & Shaw, 2001), financial performance (Kostopoulos et al., 2011) and even more broadly for the welfare of society (Lee & Lee, 2012). Although different research areas, research in the field of agricultural technology also strengthens the support of absorptive capacity for innovation by explaining that the ability to assimilate and integrate product and process information and the extent to which companies are integrated into formal and informal knowledge influence the level of innovation adoption. (Micheels & Nolan, 2016).

Other studies see that social capital also greatly contributes to the improvement of innovation (Kallio et al., 2010; Pérez-Luño et al., 2011; Yu, 2013)) and this contribution will be even stronger through the role of absorptive capacity. (Aribi & Dupouët, 2015; Pradana et al., 2020); (Ahmed et al., 2019). Research conducted on 221 small businesses based in China with a focus on social capital, sustainable innovation, absorptive capacity, marketing capability and organizational learning concluded that social capital is indeed positively related to new product development mediated by absorptive capacity (Xin et al., 2020). This research also provides empirical support for the sustainable development of small businesses. In this paper it is assumed that social capital affects business innovation through the strong role of absorptive capacity.

Based on the literature review above, it can be summarized in three research hypotheses, such as:

H1: absorptive capacities affect the innovation ability of women entrepreneurs:

H1: absorptive capacities affect the innovation ability of women entrepreneurs.

H2: absorptive capacities mediate the effect of human capital on innovation ability

H3: absorptive capacities mediate the effect of social capital on innovation ability

METHODOLOGY

Research Design

The research method used was survey method. This research was conducted in North Sulawesi Province with women entrepreneurs as the object of research. In other words, women are business owners. The implementation of research, especially data collection, was carried out for six months from March to August 2022.

Measurement Scales

The variables studied consisted of four variables, such as Human Capital consisting of four indicators, including level of education, experience, knowledge and skills (Schultz, 1961). Social Capital is measured by five indicators, namely group membership, support from groups, support from individuals, citizenship activities, and cognitive social capital (De Silva et al., 2006) and ACAP is measured by two indicators of employee ability and employee motivation (Liao et al., 2007), and Innovation Capability variables were measured by six indicators, including newness of products, services, methods of production, new markets, new ways of organizing (Johannessen et al., 2001). All items of the questionnaire used a Likert scale from 1 to 5 which indicates the level of agreement or disagreement with the statements in the instrument.

The object of this research is women entrepreneurs with a target respondent of 500 respondents spread across several large areas in North Sulawesi such as Manado City, Tomohon and Bitung City. In this study, the number of respondents successfully found was 187 respondents. This data was obtained due to the fact that many women entrepreneurs whom the sample could be used for had been strictly filtered due to the sample criteria applied. The samples criteria are: 1). Women entrepreneurs who have at least one type of business for at least 5 years, 2). Have a minimum number of permanent employees of at least 10 employees.

Analysis Data

The data Collected in the study were processed using the PLS-SEM method with the SmartPLS 3.29 application. PLS-SEM is a data analysis method that could be said to be a 'silver bullet' (Hair et al., 2011) due to PLS-SEM being a method that is robust to classical assumptions and operationalized with small samples. In addition, PLS-SEM can be used to test various causal relationship models, including mediating variables such as in this study. In examining the effect of mediation, the research refers to the guidelines of Baron & Kenny, (1986).

Through PLS-SEM, comprehensive and efficient research results can be obtained. Starting from the assessment of factor loading, validity test, reliability to the results of hypothesis testing in one process. In table 1 below, the results of the validity and reliability tests of the research instruments are presented.

Table 1 - Validity and Reliability

Construct	Remaining item	AVE Score	Composite Reliability
HC	4 from 6	0.521	0.787
SC	3 from 5	0.548	0.792
ACAP	4 from 4	0.626	0.796
Innov	3 from 5	0.521	0.842

*note: Innov: innovation capabilities; ACAP: absorptive capacities; HC: human capital; SC: social capital
Source: SmartPLS 3.29 output

Table 1 shows that the construct human capital (HC) instrument items remaining 4 out of 6 instrument items, construct social capital (SC) remaining 3 valid items out of 5 items. Furthermore, the construct innovation capabilities valid items remaining 3 of the 5 items. Only construct absorptive capacities (ACAP), none of the items must be dropped. The rule of thumb used to determine whether each item is valid or not is the factor loading (outer loading) value, if the value is at the higher of 0.500 and establishes an AVE value which is also above 0.5 (Hair et al., 2012, 2020). Thus, any outer loading value that is lower than 0.500 or above 0.500 but cannot make the AVE value higher than 0.500 the item must be dropped. Therefore, in table 1, adjustments are made to instrument items that are only valid for use. Then based on table 1 it can be concluded that the research construct is eligible to proceed to the next process, the hypothesis test.

RESULTS AND DISCUSSION

This section provides the results of data analysis to respond to the research hypothesis. The rule of thumb used to determine research results is a T-stat value higher than 1.960, in other words, if the resulting T-stat value is greater than or equal to 1.960, it can be said that the research hypothesis can be accepted. Table 2 shows these results.

Table 2 – Total Effect (specific indirect effect)

The Relationship	Original Sample	T-Stat Value	Standard Deviation
ACAP → Innov	0.234	3.473**	0.067
HC → ACAP → Innov	0.231	3.489**	0.066
SC → ACAP → Innov	0.001	0.176	0.004

*note: Innov: innovation capabilities; ACAP: absorptive capacities; HC: human capital; SC: social capital

**significant effect (t-stat > 1.960; p-value 0.05); *significant (t-stat > 1,650; p-value 0.10)

Source: SmartPLS 3.29 output

Table 2 shows that there is a significant positive influence between absorptive capacities and innovation capabilities in businesses managed by women entrepreneurs in Sulawesi Province. This result can be shown by the O-value of 0.234 and T-stat value of 3.473 which higher than 1.960. In other words, this result answers the first hypothesis that absorptive

capacities have a significant effect on the ability to innovate in businesses managed by women entrepreneurs.

Furthermore, the indirect effect results in table 2 show that there is a significant effect of human capital on innovation ability mediated by absorptive capacities. This result can be seen from the O-value of 0.231 and T-stat value of 3.489 which is higher than 1.960, thus absorptive capacities are empirically proven to be a construct that mediates the effect of human capital on innovation capabilities. In contrast, absorptive capacities did not successfully mediate the relationship between social capital and innovation capabilities. Thus, it can be concluded that hypothesis two accepted and hypothesis three rejected.

The results of this study show empirical evidence that the progress of the innovation capabilities of women entrepreneurs in North Sulawesi Province, Indonesia requires the ability of women entrepreneurs to absorb knowledge resources. In other words, women entrepreneurs in managing their businesses to be more competitive will require skills, abilities, information and experiences that have existed or are newly absorbed and embedded in women entrepreneurs. This result is consistent with previous research which states that absorptive capacities cannot be separated from their influence on innovation capabilities (Liao et al., 2007; Lund Vinding, 2006; Pérez Sánchez et al., 2017; Wuryaningrat, 2013).

Human capital in this case also plays its role to increase absorptive capacities which in turn is empirically proven to positively impact innovation capabilities. Knowledge, skills and education are basically capital for humans to survive and important capital for organizations therefore investing in human capital is a necessity (Schultz, 1961). Investment in human capital could be in the form of investment from individuals or investment from organizations where each investment needs a return which benefits individuals or organizations (Dar & Mishra, 2021; Sitepu et al., 2009). Therefore, if connected to the results of this research, it can be said that human capital that is beneficial to the organization is human capital that could be absorbed and assimilated and in turn produces business innovation capabilities.

For women entrepreneurs as business owners, human capital is crucial as business start-ups and development, which in the future is expected to be able to share their abilities with their employees, thus in the future they will no longer have only one human capital but many other human capitals. In addition, as an entrepreneur with relatively risk-taking ability, investing in the development of knowledge, skills, abilities and formal or informal education offers a high probability of increasing the ability of business innovation. However, the success or failure of human capital investment also lies in the capacity of the individual ('manpower') itself to absorb

any education, and training that it may presently be undertaking or receiving. Absorptive capacities themselves require motivation and the ability to accept new knowledge (Liao et al., 2007; Lund Vinding, 2006). Absorptive capacities are like a bottle neck (Dunphy et al., 1996). Therefore, the smaller the bottle neck, the smaller the knowledge that could be transformed into an innovation. Previous research stated that absorptive capacities at the firm level are strongly influenced by firm size, and firm age (Zou et al., 2018). Firm size relates to its financial ability to invest in innovation and R&D expenditure. Firm age is related to the firm's experience to support the firm's innovation. While on the individual side, the acquisition of new knowledge in order to be additional human capital is highly dependent on the external environment, internal structure and communication within the organization (Cohen & Levinthal, 1990). Zou et al., (2018) explained that corporate managers should act as mentors and transmitters of information. Furthermore, factors such as the average age of the employee is also an important factor due to the high level of employee creativity depending on the human age (Liu et al., 2017).

This study found empirical facts contrary to the hypothesis where absorptive capacities were unable to be a factor that mediates the influence of social capital on innovation capabilities. Unlike human capital, which focuses on the capital owned by the organization in the form of knowledge resources embedded in humans (Szulanski, 1996), social capital is capital that leads to resources associated with ownership of social networks such as social relationships of mutual recognition and acknowledgment (Bourdieu, 1986). Additionally, social capital can be defined as a set of values or informal norms shared among members of a community based on trust, norms and social networks. Social networking and trust are inseparable factors in building a knowledge sharing network which is believed to provide great benefits to innovation capabilities. (Davenport & Prusak, 1998; Levin et al., 2002, 2004). Therefore, social capital might be a more appropriate act as an antecedent of knowledge sharing, which in turn drives absorptive capacities. In other words, it is likely that social capital may not directly influence absorptive capacities, and therefore absorptive capacities may not mediate the relationship between social capital and innovation capabilities. In previous research, it was found that social capital is an impetus for cooperation and knowledge transfer in the community (Wuryaningrat et al., 2017), thus this could possibly strengthen the fact that social capital is an antecedent variable which will encourage knowledge transfer and in turn, knowledge transfer can strengthen absorptive capacities.

CONCLUSION

According to the results and discussion above, it can be concluded that the ability of business innovation managed by women entrepreneurs in North Sulawesi Province, Indonesia may develop if supported by human capital. However, its influence is not directly recognized without being supported by absorptive capacities. Absorptive capacities become a significant mediating construct in the relationship between human capital and innovation capability due to the success or failure of knowledge, abilities and skills to generate an innovation depending on the high or low capacity of individuals or companies for the acquisition of human capital itself. As explained in the innovation funnel concept, where the capacity to absorb knowledge is small, the emergence of innovation is also small. Thus, investment in human capital needs to pay attention to financial readiness, company size, experience, communication networks, internal structure and managers who are able to become information transmission channels and mentors. These factors allow absorptive capacities to be enlarged and in turn provide greater opportunities to increase innovation capabilities.

In this study there are several limitations. The first limitation is the research results could not be generalized, the generalization that might be obtained is only restricted in North Sulawesi and not necessarily applicable to the role of women entrepreneurs in other regions. The second limitation is that there is no data on the complete respondent profile, the respondents data obtained are only related to the respondents' criteria, hence factors such as financial capability and company size have not been described. Therefore, a clear overview of the company's ability to absorb knowledge and the ability to invest in human capital is not yet obtained.

The recommendations provided in future research are research involving factors that affect absorptive capacities as described in the previous paragraph. The factors mentioned above are only written based on the results of previous studies, not the results of empirical tests from this study. In fact, it was explained in the previous section that the possibility of social capital encouraging knowledge transfer will continue to encourage the strengthening of absorptive capacities. However, this opinion is still a suggestion that requires further study.

REFERENCES

Agarwal, S. , R. V. , D. L.-P. , A. V. and D. J. K. (2022), "Assessment of the significance of factors affecting the growth of women entrepreneurs: study based on experience categorization",. (2022). Assessment of the significance of factors affecting the growth of women entrepreneurs: study based on experience categorization. *Journal of Entrepreneurship in Emerging Economies*, 14(1).

- Anggadwita, G., Luturlean, B. S., Ramadani, V., & Ratten, V. (2017). Socio-cultural environments and emerging economy entrepreneurship women entrepreneurs in Indonesia. *Journal of Entrepreneurship in Emerging Economies*, 9(1), 85–96. <https://doi.org/10.1108/JEEE-03-2016-0011>
- Aribi, A., & Dupouët, O. (2015). The role of organizational and social capital in the firm's absorptive capacity. *Journal of Knowledge Management*, 19(5), 987–1006. <https://doi.org/10.1108/JKM-05-2015-0169>
- Bourdieu, P. (1986). The Forms Of Capital. In *Richardson, J., Handbook of Theory and Research for the Sociology of Education* (pp. 241–258). Westport, CT: Greenwood.
- Byrne, J., Fattoum, S., & Diaz Garcia, M. C. (2019). Role Models and Women Entrepreneurs: Entrepreneurial Superwoman Has Her Say. *Journal of Small Business Management*, 57(1), 154–184. <https://doi.org/10.1111/jsbm.12426>
- Chang, C. M., & Hsu, M. H. (2016). Understanding the determinants of users' subjective well-being in social networking sites: an integration of social capital theory and social presence theory. *Behaviour and Information Technology*, 35(9), 720–729. <https://doi.org/10.1080/0144929X.2016.1141321>
- Cohen, W. M., & Levinthal, D. A. (1990). Absorptive Capacity: A New Perspective on Learning and Innovation Wesley. *Administrative Science Quarterly*, 35(1), 128–152. <https://doi.org/10.2106/00004623-195840030-00002>
- Damanpour, F. (1991). Organizational Innovation : A Meta-Analysis Of Effect Of Determinant and Mderators. *Academy of Management Journal*, 34(3), 555–590.
- Damanpour, F., Sanchez-Henriquez, F., & Chiu, H. H. (2018). Internal and External Sources and the Adoption of Innovations in Organizations. *British Journal of Management*, 29(4), 712–730. <https://doi.org/10.1111/1467-8551.12296>
- Dar, I. A., & Mishra, M. (2021). Human Capital and SMEs Internationalization: Development and Validation of a Measurement Scale. *Global Business Review*, 22(3), 718–734. <https://doi.org/10.1177/0972150918817390>
- Davenport, T. H., & Prusak, L. (1998). *Working knowledge: how organizations manage what they know*. Harvard Business Press. <https://doi.org/10.5860/choice.35-5167>
- De Silva, M. J., Harpham, T., Tuan, T., Bartolini, R., Penny, M. E., & Huttly, S. R. (2006). Psychometric and cognitive validation of a social capital measurement tool in Peru and Vietnam. *Social Science and Medicine*, 62(4), 941–953. <https://doi.org/10.1016/j.socscimed.2005.06.050>
- Dong, H., & Khan, M. S. (2023). Exploring the Role of Female Empowerment in Sustainable Rural Tourism Development: an Exploratory Sequential Mixed-Method Study. *International Journal of Professional Business Review*, 8(4), e01651. <https://doi.org/10.26668/businessreview/2023.v8i4.1651>

- Dunphy, S. M., Herbig, P. R., & Howes, M. E. (1996). The Innovation Funnel. *Technological Forecasting and Social Change*, 53(3), 279–292. [https://doi.org/10.1016/S0040-1625\(96\)00098-4](https://doi.org/10.1016/S0040-1625(96)00098-4)
- Ebrahimi Mehrabani, S., & Shajari, M. (2012). Knowledge Management and Innovation Capacity. *Journal of Management Research*, 4(2). <https://doi.org/10.5296/jmr.v4i2.1390>
- Fauziah, F., Nurfadillah, M., & Yamin, B. (2023). Social Motivation Of Dayak Women's Entrepreneurship: Explore The Home Industry In East Kalimantan. *International Journal of Professional Business Review*, 8(3). <https://doi.org/10.26668/businessreview/2023.v8i3.818>
- Ganguly, A., Talukdar, A., & Chatterjee, D. (2019). Evaluating the role of social capital, tacit knowledge sharing, knowledge quality and reciprocity in determining innovation capability of an organization. *Journal of Knowledge Management*, 23(6), 1105–1135. <https://doi.org/10.1108/JKM-03-2018-0190>
- Ge, T., Abbas, J., Ullah, R., Abbas, A., Sadiq, I., & Zhang, R. (2022). Women's Entrepreneurial Contribution to Family Income: Innovative Technologies Promote Females' Entrepreneurship Amid COVID-19 Crisis. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.828040>
- Grant, R. M. (1996). Toward a Knowledge-Based Theory of the Firm. *Strategic Management Journal*, 17(Winter Special Issue), 109–122.
- Gumba, K., Uvarova, S., Belyaeva, S., & Vlasenko, V. (2021). Innovations as sustainable competitive advantages in the digital economy: Substantiation and forecasting. *E3S Web of Conferences*, 244. <https://doi.org/10.1051/e3sconf/202124410011>
- Inkpen, A. C., & Tsang, E. W. K. (2005). SOCIAL CAPITAL, NETWORKS, AND KNOWLEDGE TRANSFER. *Academy of Management Review*, 30(1), 146–165.
- Johannessen, J. A., Olsen, B., & Lumpkin, G. T. (2001). Innovation as newness: What is new, how new, and new to whom? *European Journal of Innovation Management*, 4(1), 20–31. <https://doi.org/10.1108/14601060110365547>
- Kelley, D. J., Baumer, B. S., Brush, C., Greene, P. G., Mahdavi, M., Majbouri, M., Cole, M., Dean, M., & Heavlow, R. (2017). *Women's Entrepreneurship 2016/2017 Report Global Entrepreneurship Monitor*.
- Leana, C. R., & Van Buren, H. J. (1999). Organizational Social Capital and Employment Practices. In *Source: The Academy of Management Review* (Vol. 24, Issue 3).
- Lee, W. C., & Law, S. H. (2017). Roles of Formal Institutions and Social Capital in Innovation Activities: A Cross-Country Analysis. *Global Economic Review*, 46(3), 203–231. <https://doi.org/10.1080/1226508X.2017.1292859>
- Levin, D. Z., Cross, R., & Abrams, L. C. (2002). Why Should I Trust You? Antecedents of Trust in a Knowledge Transfer Context. *Academy of Management Meetings*.

Levin, D. Z., Cross, R., Abrams, L. C., & Lesser, E. L. (2004). Trust and Knowledge Sharing: A Critical Combination. In *Creating Value with Knowledge: Insights from the IBM Institute for Business Value* (Issue January). <https://doi.org/10.1093/0195165128.003.0003>

Liao, S. H., Fei, W. C., & Chen, C. C. (2007). Knowledge sharing, absorptive capacity, and innovation capability: An empirical study of Taiwan's knowledge-intensive industries. *Journal of Information Science*, 33(3), 340–359. <https://doi.org/10.1177/0165551506070739>

Liñán, F., Jaén, I., & Martín, D. (2022). Does entrepreneurship fit her? Women entrepreneurs, gender-role orientation, and entrepreneurial culture. *Small Business Economics*, 58(2), 1051–1071. <https://doi.org/10.1007/s11187-020-00433-w>

Linda, M. R., Thabrani, G., & Firman, F. (2019). The Role of Human Capital and Knowledge Management in Innovation. *Advances in Economics, Business and Management Research, Volume 145 8th International Conference on Entrepreneurship and Business Management (ICEBM 2019) UNTAR*.

Liputan6.com. (2021). Rasio Pengusaha Perempuan Indonesia Masuk Terbanyak di Dunia. <https://www.liputan6.com/bisnis/read/4696679/rasio-pengusaha-perempuan-indonesia-masuk-terbanyak-di-dunia>.

Liu, D., Gong, Y., Zhou, J., & Huang, J. C. (2017). Human resource systems, employee creativity, and firm innovation: The moderating role of firm ownership. *Academy of Management Journal*, 60(3), 1164–1188. <https://doi.org/10.5465/amj.2015.0230>

Lund Vinding, A. (2006). Absorptive capacity and innovative performance: A human capital approach. *Economics of Innovation and New Technology*, 15(4–5), 507–517. <https://doi.org/10.1080/10438590500513057>

Luthans, F., Vogelgesang, G. R., & Lester, P. B. (2006). Developing the Psychological Capital of Resiliency. *Human Resource Development Review*, 5(1), 25–44. <https://doi.org/10.1177/1534484305285335>

Nonaka, I., & Reinmoeller, P. (2017). Creating Value: Winners in the New Business Environment Chapter 6: Knowledge Creation and Utilization: Promoting Dynamic Systems of Creative Routines. In *Creating Value: Winners in the New Business Environment*. <https://doi.org/10.1002/9781405164092>

Nonaka, I., & Toyama, R. (2015). The knowledge-creating theory revisited: knowledge creation as a synthesizing process. In *The Essentials of Knowledge Management* (pp. 95–96). <https://doi.org/10.1057/palgrave.kmrp.8500001>

Pérez Sánchez, E. O., Toro Jaramillo, I. D., & Hernandez Sánchez, B. Y. (2017). Measurement of potential absorption capacity in Colombia's innovative companies. *Espacios*, 38(26), 1307–1321. <https://doi.org/10.2307/2393553>

Schultz, T. W. (1961). Investment in Human Capital. *The American Economic Review*, 51(1), 1–17.

- Shultz, K. S. (1996). Distinguishing Personality And Biodata Items Using Confirmatory Factor Analysis Of Miytitrait-Multimethod Matrices. *Journal of Business and Psychology*, 10(3), 263–288.
- Sitepu, R., Sinaga, B., Oktaviani, R., & Tambunan, M. (2009). The Impact of Human Capital Investment on Income Distribution and Poverty Incidence in Indonesia. *Forum Pascasarjana*, 32(2), 117–127.
- Srivastava, A., Bartol, K. M., & Locke, E. A. (2006). Empowering leadership in management teams: Effects on knowledge sharing, efficacy, and performance. *Academy of Management Journal*, 49(6), 1239–1251. <https://doi.org/10.5465/AMJ.2006.23478718>
- Srivastava, A. P., & Joshi, Y. (2018). Examining the role of technology leadership on knowledge sharing behaviour. *International Journal of Knowledge Management*, 14(4), 13–29. <https://doi.org/10.4018/IJKM.2018100102>
- Statistik, B. P. (2022). *Perempuan dan Laki-laki di Indonesia 2022*. <https://www.bps.go.id/publication/2022/12/16/a37fb493455d772274cc2314/perempuan-dan-laki-laki-di-indonesia-2022.html>
- Suciu, M. C., Postma, E., Nasulea, C., & Nasulea, D.-F. (2018). Competitiveness a Innovation Within The Creative Economy. *Basiq International Conference: New Trends in Sustainable Business and Consumption 2018, June*, 431–437.
- Sumual, T. E. M., Kawulur, A. F., & Kawulur, H. R. (2019). Competitive Advantage and Culinary Business Performance: an Antecedent of Human Capital and Entrepreneur Competence. *International Journal of Recent Technology and Engineering*, 8(2S), 425–432.
- Sumual, T. E. M., Soputa, G. J., & Kawulur, A. F. (2020). Human Resources Readiness Assessment in The Framework of Business Development. *Journal of International Conference Proceedings*, 3(1), 267–272. <https://doi.org/10.32535/jicp.v2i4.802>
- Sumual, T. E. M., Soputan, G. J., & Kawulur, A. F. (2020). Human Capital Improvement on Informal Businesses. *Proceedings of the 3rd International Conference on Social Sciences (ICSS 2020)*, 167–170.
- Szulanski, G. (1996). Exploring internal stickiness: Impediments to the transfer of best practice within the firm. *Strategic Management Journal*, 17(SUPPL. WINTER), 27–43. <https://doi.org/10.1002/smj.4250171105>
- Tidd, J., & Bessant, J. (2018). Innovation Management Challenges: From Fads To Fundamentals. *International Journal of Innovation Management*, 22(5). <https://doi.org/10.1142/S1363919618400078>
- Tidd, J., & Bessant, J. (2021). *Managing innovation: Integrating technological, organizational and market change* (7th ed.). Wiley.
- Tsai, W. (2002). Social structure of “coopetition” within a multiunit organization: Coordination, competition, and intraorganizational knowledge sharing. *Organization Science*, 13(2), 179–190. <https://doi.org/10.1287/orsc.13.2.179.536>

Wuryaningrat, N. F. (2013). Knowledge sharing, absorptive capacity and innovation capabilities: An empirical study on small and medium enterprises in North Sulawesi, Indonesia. *Gadjah Mada International Journal of Business*, 15(1), 61–78. <https://doi.org/10.22146/gamaijb.5402>

Wuryaningrat, N. F., Kawulur, A. F., & Kumajas, L. I. (2017). Examining an endangered knowledge transfer practice known as “mapalus” in an Indonesian village: Implications for entrepreneurial activities and economic development. *International Journal of Business and Society*, 18, 309–322.

Wuryaningrat, N. F., Kindangen, P., Sendouw, G., & Lumanouw, B. (2019). The role of person job fit and person organization fit on the development of innovation capabilities at indonesia creative industry. *International Journal of Engineering and Advanced Technology*, 8(5C), 80–85. <https://doi.org/10.35940/ijeat.E1011.0585C19>

Yu, S. H. (2013). Social capital, absorptive capability, and firm innovation. *Technological Forecasting and Social Change*, 80(7), 1261–1270. <https://doi.org/10.1016/j.techfore.2012.12.005>

Zhou, J. (2003). *When the Presence of Creative Coworkers Is Related to Creativity : Role of Supervisor Close Monitoring , Developmental Feedback , and Creative Personality*. 88(3), 413–422. <https://doi.org/10.1037/0021-9010.88.3.413>

Zou, T., Ertug, G., & George, G. (2018). The capacity to innovate: a meta-analysis of absorptive capacity. *Innovation: Organization and Management*, 20(2), 87–121. <https://doi.org/10.1080/14479338.2018.1428105>