

RELATIONSHIP BETWEEN HUMAN RESOURCE ASSETS, ORGANIZATION, RELATIONAL AND FINANCIAL LITERACY ON OPTIMIZATION OF MSMES

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Abstract

MSMEs are experiencing rapid growth along with advances in business and technology, and play a significant role in increasing national income. This study examined 385 MSMEs in Gunung Kidul that had been established for at least one year and utilized financial digitalization through systems and technology. The study results showed that human resources, organizational capital, relational capital, and digital literacy positively influenced MSME performance. However, intellectual capital did not influence MSME performance because if it was not balanced with practical skills, it would not improve performance. This finding confirms that the competitiveness among MSME human resources is increasingly fierce, so optimizing performance depends not only on knowledge or intellectual aspects, but also skills in establishing relationships and managing organizational resources. This study contributes to resource theory by emphasizing the importance of a combination of digital literacy, organizational capacity, relationships, and human resource quality to encourage sustainability and improve MSME performance in the digital era.

Keywords: Human Resources, Intellectuals, Organization, Relations, Digital Literacy

INTRODUCTION

The extraordinary development of business in the global era along with the industrial revolution 4.0, especially in the technology sector, has influenced the escalation of MSME performance achievements. This is especially true in developing MSMEs, as outlined in the 2005-2025 National Long-Term Development Plan (RPJPN), where the government has determined that MSME optimization is necessary to accelerate national development, as MSMEs make a significant contribution to the country's economy. Therefore, MSMEs are also required to have competitiveness that is not solely dependent on imports. Siti Fatimah (2021) which is proven by the contribution of MSMEs in absorbing a workforce of 117 million or around 97% and contributing 61.1% of Gross Domestic Product (Sasongko, 2020). Improving the capabilities of the workforce or human resources (HR) can also improve the management of MSMEs (Dinku, et al., 2024; Nugrahani, et al., 2020). This condition is also relevant to MSMEs in the Special Region of Yogyakarta, particularly in Gunungkidul Regency, which has great potential for development.

The success of MSMEs' performance is inseparable from the resources they possess, or assets, both physical and non-physical. MSME assets are crucial to the success of MSME performance. Asset ownership, whether physical or tangible, plays a crucial role. Tangible assets can be assets or capital owned by MSMEs, while intangible assets can be personal expertise within MSMEs. Tangible assets of MSMEs may be reflected in the number of human resources or workforce they possess, whereas intangible assets, particularly intellectual assets, serve a pivotal role in administrative processes to enhance managerial effectiveness. Intellectual capital, as a form of intangible asset, is grounded in the knowledge, expertise, and skills of individuals (Tastan & Davoudi, 2015), which in turn generate value creation and competitive advantage. According to Abualoush, et al., (2018b) the management of intellectual capital should concentrate on three fundamental dimensions: human capital, structural or organizational capital, and relational capital. Among these components, human capital is frequently regarded as the most critical, given that organizational success is largely dependent on the competencies and capabilities of its employees in sustaining overall performance. This perspective is consistent with Obeidat, et al., (2017) who argue that the quality of human resources constitutes a decisive factor in enhancing organizational performance.

Intangible capital means assets that are invisible but still contribute to the company. Siboni (2017) examined intellectual capital manifested in CSR (Corporate Social Responsibility) (Razafindrambinina & Kariodimedjo, 2011), while Ulum (2017) examined intellectual capital related to relational capital. The relationship between the organization and its members, the relationship between business activities and customers, including understanding the market share of MSMEs according to customer needs and preferences, profitability and brand loyalty (Mardiana & Hariyati, 2014). Relational capital is a network of relationships or harmonious relations owned by each MSME and its partners. MSMEs that invest heavily become relational capital to be able to improve MSME performance.

Yogyakarta has 521,000 MSMEs spread across all regencies and cities, requiring intellectual capital to develop them. Furthermore, understanding technological literacy significantly contributes to the success of MSMEs. Of these MSMEs, only a small number utilize technology. Most rely on traditional sales methods, with data showing that 90.96 % of MSMEs in the Special Region of Yogyakarta (DIY) do not yet utilize computers in their business operations (Risdiyanto, et al., 2025). This indicates that many obstacles remain in developing MSMEs. The biggest obstacle often faced by MSMEs is low digital literacy, including in the Gunungkidul region (Meythi et al., 2023).

The obstacles faced by MSMEs are diverse; therefore, strategic development and empowerment are needed to improve MSME performance and make them more independent and resilient. Pulic (1998) stated that in facing business competition, a company cannot only rely on tangible assets. In addition, companies must also be able to utilize intangible assets, such as intellectual capital, which includes intelligence, skills, and the quality of human resources (Nugrahani et al., 2020). The above issues indicate that MSMEs still face many challenges, such as

intellectual capital, which can be determined from both tangible and intangible assets. Furthermore, organizational capital also plays a significant role in improving performance, including relational capital and the use of digital literacy. Therefore, research is needed to examine the role of human resources, intellectual capital, organizational capital, relational capital, and digital literacy in achieving MSME performance, specifically in the Gunung Kidul region.

THEORETICAL STUDY AND HYPOTHESIS DEVELOPMENT

Resource Based View RBV Theory

Every organization or company, including MSMEs, certainly needs to have resources to develop, in accordance with the opinion of Aisyah, et al., (2022) who said that resources are an important element of the company, so it is necessary to consider potential strengths and weaknesses. Company resource management needs to be optimized to increase the value of products and services, which in turn allows the company to achieve greater competitive advantage. In accordance with the theory that discusses the importance of resources, both physical and non-physical, because resources are assets or potential owned by the company to support the achievement of a more effective competitive (Sari, 2020). Therefore, in testing this MSME using the RBV approach because MSMEs need efforts to optimize resources that can be used to prepare for MSME competition which can ultimately improve MSME performance.

According to several organizational experts, in discussing intellectual capital, it is necessary to consider asset management, both tangible and intangible assets, and to support the achievement of sustainable success and strong competitiveness in business activities. In general, many researchers classify intellectual capital into three main categories, namely: (1) human capital (HR); (2) structural capital (SSC); and (3) customer capital (SCC) (Stewart, 1998; Bontis, 2000; Ulum, 2013).

MSME Performance

Every existing business will certainly be assessed on how much its ability to achieve its targets. Likewise, MSMEs are inseparable from the assessment of their success. According to Syahyono, et al., (2025), MSME performance achievement is a person's desire to produce something related to the desired business goals. A person's performance in running a business can indicate how capable a person is in maintaining and developing their business (Fachrunnisa, et al., 2022). According to Nusron, et al., (2024), MSME performance is the result of the work carried out by MSME actors which can be seen from several aspects, including: leadership, number of workers, ability to meet customer needs, level of knowledge, and income as well as producing quality goods, including encouraging MSME sustainability (Pramudiati, et al., 2019).

Human Resources (HR)

Human resources (HR) are a crucial element in achieving MSME performance. Human resources are demonstrated by the number of employees, a

key determinant of MSME performance. HR empowerment requires innovation and improvement, although this is difficult to measure directly. Human resources, including knowledge, skills, and expertise, are invaluable assets within an organization or company. Human capital, or HR, reflects an organization's ability to develop optimal solutions through the knowledge of its employees. Human capital improvement can be achieved when a company effectively utilizes the knowledge possessed by its workforce (Sawarjuwono & Kadir, 2003). Some HR in MSMEs need to pay attention to the level of employee numbers that are efficient and effective, including in carrying out company innovation for research and development (R&D) activities (Leitner, 2014). Having an innovative employee base will impact MSME performance. In absorbing labor or the number of employees, of course, attention must be paid to workforce qualifications, employee knowledge, and employee skills (Rahayu, 2022b).

In accordance with the Resource-Based View (RBV) theory, which explains that companies, including MSMEs, can utilize their resources and expertise as a basis for formulating business strategies in a competitive environment. Overall, human resources are considered capable of contributing to improving MSME performance. In accordance with the RBV theory and previous research findings related to HR and MSME performance, the first hypothesis can be formulated as follows.

H1: Human Resources have a positive influence on the performance of MSMEs.

Intellectual Capital

Intellectual capital is defined as an intangible or non-physical asset owned by an organization, which includes elements such as innovative capabilities, processes, knowledge, patterns, and networks and collaborative relationships inherent in the organization (Hidayat, et al., 2021). According to Sawarjuwono & Kadir (2003), intellectual assets are the integration of results derived from three key components of an organization, namely human capital and other forms of capital. These elements are closely related to knowledge and technology, which generate added value and ultimately create a competitive advantage for the company.

According to Bontis, et al., (2007), intellectual capital refers to the knowledge possessed by employees in a company that enables them to find solutions in their work and supports the achievement of organizational goals. This is in accordance with the Resource-Based View (RBV) theory, which explains how companies utilize their resources and expertise as a basis for formulating business strategies in a competitive environment. The results of a study by Zuliyati, et al., (2017) showed that intellectual capital has a positive effect on the performance of MSMEs. A study by Rahayu (2022) showed that intellectual capital has a correlation with human resource capital and MSME performance. Overall, intellectual capital is considered capable of contributing to improving company performance. Based on the Resource-Based View (RBV) theory related to the optimization of existing resources and the findings of previous research, the second hypothesis can be formulated as follows.

H2: Intellectual capital has a positive effect on the performance of MSMEs.

Capital Organization

Company or organizational capacity needs to be optimized in the management and processes that support daily operational activities. Therefore, efforts to improve the performance of business organizations, including MSMEs, require the potential of the organization. This potential includes operational systems, manufacturing procedures, work culture, managerial philosophy, and the company's diverse intellectual property. According to Sawarjuwono & Kadir (2003), organizations require intelligent management with good systems and procedures, although achievement is not easy. Organizations, including MSMEs, need to implement efficient procedures that have the potential to achieve maximum performance. The concept of structural capital or organizational capital plays a crucial role in the development of MSMEs, including intellectual capital, and serves as a link between human resources and intellectual capital. Organizational capital can be used to measure MSME achievements (Ulum, 2017) by including the organization's vision and mission, the information systems used, and the culture within the organization (Rahayu, 2022).

Organizational capital encompasses all forms of assets owned by an organization, both directly and indirectly, by improving the performance of SMEs. According to the Resource-Based View (RBV) theory, company resources, both physical and intellectual, are key to creating value, supporting business sustainability, and creating competitive advantage. Hatmawan (2023) study demonstrated that organizational capital has a significant positive influence on the financial performance of MSMEs. Zuliyati et al., (2017) demonstrated a positive relationship between organizational capital or structural capital and MSME performance. Based on the Resource-Based View (RBV) theory related to the optimization of existing resources and previous research findings, the third hypothesis can be formulated as follows.

H3: Capital organization has a positive influence on the performance of MSMEs.

Capital Relations

Relationship capital is a form of mutually beneficial relationship between a company and its partners, including suppliers and customers who are loyal, qualified, and satisfied with the services offered. This also indicates the company's influence in collaborating with the government and local communities. Relationship capital is developed through a process of introduction, learning, and building trust. This process builds a strong relationship between the company and its consumers. A person's decision to purchase a product from a company is often influenced by factors such as trust, price, and the specifications of the product offered. The stronger the relationship, the more likely the consumer is to make a purchase. Ulum (2017) examined relationship capital in relation to MSME performance, and Rahayu (2022) examined relationship capital by including brand, customer loyalty, distribution network, and franchise network.

Companies, including MSMEs, allocate resources focused on consumer needs and dominate the market, thereby improving their performance. A positive response to consumer input and criticism will strengthen their trust in the company. This trust will contribute to consumer loyalty, which will ultimately lead to continued use of the company's products. Zuliyati et al., (2017) demonstrated that relational capital has a positive impact on MSME performance. Based on the Resource-Based View (RBV) theory related to the optimization of existing resources and previous research findings, the fourth hypothesis can be formulated as follows.

H4: Capital relations have a positive effect on the performance of MSMEs.

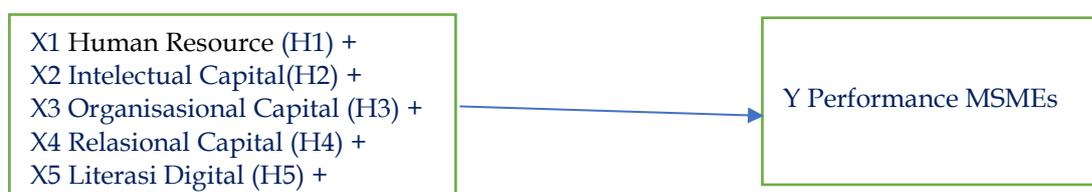
Digital Literacy

Digital literacy refers to the skills of utilizing digital technology across various platforms to access, manage, integrate, analyze, and evaluate information, with the aim of creating new knowledge and communicating it to others (Van Laar, et al., 2017). Digital literacy is an individual's skill in exploring, organizing, analyzing, and evaluating information obtained using digital technology devices (Setyawati, et al., 2022). A digitally responsive individual is someone who is able to use various electronic communication media and manage information effectively to acquire new knowledge, collaborate with others, and produce unique work (Setyaningsih, et al., 2019). In this study, digital literacy was measured using indicators of mastery of digital devices, digital media, and digital applications (Santoso, 2023).

The use of digital technology plays a crucial role in product marketing, which in turn can increase revenue and sales. The implementation of digital technology in companies not only strengthens customer interactions and brand image but can also drive increased sales and profits (Usmaniyah & Abrori, 2024). Empirical evidence from Farhan et al., (2022) further demonstrates that digital literacy exerts a significant and positive influence on the performance of MSMEs, highlighting its critical role in facilitating the effective application of digital technologies. Consistent findings are reported by Bidasari, et al., (2023), who also confirmed the positive and significant relationship between digital literacy and MSME performance. Drawing upon the Resource-Based View (RBV) framework, which emphasizes the optimization of organizational resources, and supported by previous empirical studies, the fifth hypothesis of this research is therefore proposed:

H5: Digital literacy has a positive effect on the performance of MSMEs.

If the research model is described as follows.



METHOD

This study used a sample of 385 MSMEs. The sample was selected purposively with the following requirements: MSMEs have been established for at least 1 year,

MSMEs use a digital accounting system with QRIS payments in transactions, and have a minimum turnover of IDR 4 million per month. Data collection was carried out by filling out a questionnaire for MSMEs with questions in accordance with the research objectives related to human resources, intellectual capital, capital organization, capital relations, and digital literacy. This study also tested the validity and reliability related to the variables studied to ensure their authenticity and consistency as a representation of the respondents' perspectives. The variables in this study were measured using a 5-point Likert scale with a range of 1 ("strongly disagree") to 5 ("strongly agree") for the variables of intellectual capital, capital organization, capital relations and digital literacy, and MSME performance. Meanwhile, the HR variable was measured by the number of employees in the MSME.

Table 1 Variables and Variable Measurement

No	Variables	Measurement with a Likert scale
1	Dependent Variable: MSME performance is the result of work carried out by MSME actors which can be seen from several aspects, including: leadership, number of workers, ability to meet customer needs, level of knowledge, and income (Rahayu, 2022).	Measurement using a Likert scale consists of 12 question items.
2	Independent Variable: Human Resources (HR) reflects the organization's ability to develop optimal solutions through its employees.	Ratio Scale: Number of MSME employees
3	Intellectual capital is defined as the intangible or non-physical assets owned by an organization, which include elements such as innovative capabilities, processes, knowledge, patterns, and collaborative networks and relationships (Rahayu, 2022).	There are 6 questions, using a Likert scale.
4	Capital Organization, namely the company's capacity in management and processes that support daily operational activities (Rahayu, 2022).	There are 6 question items with a Likert scale.
5	Capital relations: a form of mutually beneficial relationship between a company and its partners, including suppliers and customers who are loyal, qualified, and satisfied with the services offered (Rahayu, 2022).	There are 5 question items with a Likert scale.
6	Digital Literacy: individual skills in exploring, organizing, analyzing, and evaluating information obtained using digital technology devices (Setyawati et al., 2022).	There are 3 question items, with a scale of likert

Data analysis used Multiple Regression with hypothesis testing using a t-test and a 5% significance level. Furthermore, this study also tested reliability and validity and conducted classical assumption tests to ensure the study met the criteria for regression testing.

RESULTS AND DISCUSSION

1. Data Validity and Reliability Test

Before conducting data analysis, the researcher tested the validity and reliability of the data to be tested. The results of the validity and reliability are as follows.

Table 2. Validity and Reliability Test

No	Variables	Validity (significance of correlation)	Reliability (Cronbach Alpha)
1	Intellectual Capital	0.000	0.747
2	Capital Organization	0.000	0.694
3	Capital Relations	0.000	0.825
4	Digital Literacy	0.000	0.839
5	MSME Performance	0.000	0.730

Based on Table 2 above, it appears that all items in the questionnaire are valid because they are correlated and significant. Similarly, the reliability test results show that all Cronbach's Alpha scores are above 0.07, indicating that all instruments are reliable.

2. Descriptive Statistics Data

Based on descriptive statistics (Table 3) it can be seen that 385 MSMEs were used for the research sample. The results of the analysis show that the lowest MSME business age is 1 year and the average age of MSMEs is 4 years 6 months, while the longest is 10 years. The minimum MSME turnover is Rp. 4,000,000, namely MSME "Aisyah Herbal" and the highest is Rp. 100,000,000 per month achieved by MSME "Dewi Sri One Stop Service" and the average sales turnover per month is Rp. 14,726,170. The minimum MSME has 2 employees, and the maximum is 10 employees and the average MSME has 4-5 employees. On average, intellectual capital is 23.75; The average MSME in Gunung Kidul showed that the intellectual capital possessed by MSMEs was 23.57, or they answered 3.95 of the questions related to intellectual capital, or answered 4 strongly agree. The same thing happened with the question item related to capital organization, with an answer of 4 meaning agree. The descriptive table shows that the average MSME capital relation agrees that digital literacy can improve MSME performance. The following descriptive statistics are presented in Table 3:

Table 3. Descriptive Statistics

	n	Minimum	Maximum	Mean	Std. Dev
Business Age	385	1	10	4.63	2,624
Monthly Turnover	385	4000000	100000000	14352244.16	14726170.21
Number of employees	385	2	10	4.07	1,869
Intellectual Capital	385	11	30	23.75	3.133
Capital Organization	385	19	30	24.77	2,345
Capital Relations	385	12	25	18.20	2,787
Digital Literacy	385	8	15	13.47	1,683
MSME Performance	385	38	60	52.31	4.121

3. Hypothesis testing

The results of the hypothesis test can be shown by the results of the multiple regression test and the t-test. The results of the test are as follows.

Table 4. Regression Model and Hypothesis Testing

Variables	Unstandardized		t	sig	note
	Beta	Std Error			
Constant	37,616	3,350	11,227	0.000	
HR	0.175	0.105	1,669	0.096	H1: Supported
Intellectual Capital	-0.209	0.062	-3,352	0.001	H2: Not Supported
Capital Organization	0.233	0.083	2,810	0.005	H3: Supported
Capital Relations	0.423	0.070	6,015	0.000	H4: Supported
Digital Literacy	0.408	0.115	3,535	0.000	H5: Supported
Adjusted R Square	0.151 (0.00)				
F test	14.643 (0.000)				

Based on the test in Table 4, the HR variable or number of employees has a moderately significant positive effect on MSME performance, with a significance level of $0.09 < 0.1$. The study results indicate that a higher number of employees means higher MSME performance. This supports the studies of Saputra & Irawan (2024) and Sari & Hikmah (2024) which show that HR influences MSME performance.

Meanwhile, the t-test result (significance) of intellectual capital was $-3.352 (0.001) < 0.000$ with the opposite direction, which means that hypothesis 2 is not supported, meaning intellectual capital has no effect on MSME performance. Intellectual capital does not contribute to improving MSME

performance in the Gunungkidul region. This finding is in line with research conducted by Hatmawan (2023); Rahayu (2022a), and Zuliyati et al., (2017), which means intellectual capital does not affect MSME performance. However, the results of this study are consistent with research conducted by Mubarok, et al., (2022) and Purnama & Arie (2021). Intellectual capital management in Gunungkidul MSMEs is still not optimal. This indicates that MSME owners and employees are not yet skilled enough/have adequate knowledge, and are not yet able to complete work efficiently. In addition, they have not shown creativity in increasing productivity and work effectiveness. MSME owners appear to be under-focused on meeting human resource needs, resulting in customer dissatisfaction and failure to achieve revenue growth (Hasmirati, 2022). If MSMEs can leverage their employees' understanding, human resources have the potential to improve MSME performance (Mubarok et al., 2022). Therefore, even if human resources improve, this does not always have a direct impact on MSME performance, as also noted by Purnama & Arie (2021).

The results of the third hypothesis test show a t-value (significance) of organizational capital of 2.810 (0.005) <0.00, which means organizational capital can improve MSME performance. The study results show that organizational capital has a positive effect on MSME performance in Gunungkidul. In other words, increasing the structural capital aspect of the organization can influence MSME performance. Good infrastructure and procedures are crucial for facilitating the flow of information in business processes, which in turn will streamline operations and encourage better performance. This is in line with Resource-Based Theory, which emphasizes the importance of MSME resources as assets that support the achievement of competitive advantage in running a business (Purnama & Arie, 2021). This finding is consistent with previous research by Hatmawan (2023); Rahayu, (2022), and Zuliyati et al., (2017), which also found that structural capital influences MSME performance.

The results of the fourth hypothesis test show a t-value (significance) for relational capital of 6.105 (0.000) <0.05, which means that research hypothesis 4 is supported. This indicates that relational capital or customer capital has a positive effect on the performance of MSMEs in Gunungkidul. This influence is caused by good relationships between MSMEs and their partners, both consumers and other parties such as franchisees. By maintaining good communication, providing timely service, and ensuring customer satisfaction, MSMEs can improve their performance. The stronger the relational capital, the greater the impact on MSME performance in this region (Rahayu, 2022). The results of this study support previous research by Hatmawan, (2023) and Zuliyati et al., (2017) which proved a positive correlation between customer capital and MSME performance.

Furthermore, the fifth hypothesis testing concerning digital literacy indicates a t-value of 3.353 with a significance level of 0.000 (< 0.05), signifying that digital literacy positively affects MSME performance in Gunungkidul. This outcome reflects that MSME actors not only adopt digital technologies but also

integrate them comprehensively into their daily business operations, particularly in promotional and marketing activities via digital platforms, which subsequently increase profitability. The growing utilization of social media for marketing purposes has been shown to directly correlate with higher business profits (Zahro, 2019). This research is in line with the results of research by Amelia, et al., (2022) and Farhan et al., (2022) which likewise demonstrated that digital literacy significantly enhances MSME performance.

Moreover, the results presented in Table 4 reveal that the F-test produces a value of 14.643 with a significance of 0.000 (< 0.05), implying that the regression model employed in this study is suitable for predicting MSME performance. The Adjusted R-Square value of 0.151 indicates that 15.10% of the variation in MSME performance in Gunungkidul can be explained by the independent variables namely human resources, intellectual capital, organizational capital, relational capital, and digital literacy while the remaining 84.90% is influenced by other factors not incorporated in this research model.

CONCLUSION

Based on the analysis and discussion, it can be concluded that human resources, organizational capital, capital relations, and digital literacy have a positive influence on MSME performance. Conversely, intellectual capital has no effect on MSME performance. The variable of capital organization is proven to influence the performance of MSMEs in Gunungkidul. This indicates that the better the management and implementation of capital organization, the better the performance of MSMEs. Similarly, customer capital relations have a significant influence on MSME performance in this region. MSMEs that are able to establish good relationships with business partners, including consumers and franchisees, through effective communication, timely service, and a focus on customer satisfaction, tend to improve their business performance.

Furthermore, digital literacy has also been shown to contribute to the performance of MSMEs in Gunungkidul. When MSMEs consistently utilize digital literacy in their daily activities, such as for promotions or business transactions, this not only supports smooth operations but also increases business profits, ultimately strengthening MSME performance.

However, human resource development among MSMEs in Gunungkidul is still suboptimal. Factors such as experience, skills, and knowledge are not being utilized effectively to support teamwork and increase business productivity. This poses a challenge to the overall performance of MSMEs.

As a result of the ongoing research, there are a number of obstacles found. One of the reasons is the limited number of studies on intellectual capital, so that data on intellectual capital is difficult to collect. In addition, the instrument used is limited to a questionnaire distributed in hard file form to respondents, without conducting interviews, so there is still a possibility that the answers given do not correspond to the actual situation. In this study, the classification of MSME participants is not differentiated based on the category of micro, small, or medium enterprises. The analysis revealed that the Adjusted R Square value is 15.10%,

indicating that there is still 84.90% of the variation in MSME performance caused by other factors not tested in this research model. For further research, it is recommended to include additional variables that have the potential to influence MSME performance such as adding respondents and not limited to MSMEs in Gunungkidul only so that the final results obtained can be applied to a wider sample population.

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