How does organizational performance in the education sector improve? Learning and Growth-perspective

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ABSTRACT
The purpose of this study is to measure whether organizational performance in the education sector could be improved through a learning and growth perspective, which involves constructs of human capital, information capital, and organizational capital. This research uses a quantitative approach with the survey as a data collection method and the structural equation model as the analysis method via Smart PLS software to measure the relationship between human, information, and organizational capital with organizational performance, from the perspective of learning and growth. This study concluded that human capital (HC) and Informational Capital (IC) simultaneously have a strong relationship to organizational performance (OP) with Organizational Capital (OC) as a mediating variable. Directly, HC and OC have a significant relationship with OP. While IC has a weak relationship with OP. These results conclude that without HC and OC, IC is a variable that functions to encourage and utilize HR work to form OC and OP. These findings strengthen the theory about the importance of human resource management in the education sector through aspects of meeting the needs of knowledge development, and skill competencies that keep up with developments. This finding also strengthens the theory that claim that learning and growth factors influence organizational performance along the internal process, financial, and customer perspectives.

Keywords:
Human capital (HC), Informational capital (IC), Organizational capital (OC), Organizational Performance (OP), Education sector

ABSTRAK
Tujuan dari penelitian ini adalah untuk mengukur apakah kinerja organisasi di bidang pendidikan dapat ditingkatkan melalui perspektif pembelajaran dan pertumbuhan yang melibatkan konstruksi modal manusia, modal informasi, dan modal organisasi. Penelitian ini menggunakan pendekatan kuantitatif dengan survei sebagai metode pengumpulan data dan model persamaan struktural sebagai metode analisis melalui perangkat lunak Smart PLS untuk mengukur hubungan antara manusia, informasi, dan modal organisasi dengan kinerja organisasi, dari perspektif pembelajaran dan pertumbuhan. Penelitian ini menyimpulkan bahwa human capital (HC) dan Informational Capital (IC) secara simultan memiliki hubungan yang kuat terhadap kinerja organisasi (OP) dengan Organizational Capital (OC) sebagai variabel mediasi. Secara
langsung, HC dan OC memiliki hubungan yang signifikan dengan OP. Sedangkan IC memiliki hubungan yang lemah dengan OP. Hasil tersebut menyimpulkan bahwa tanpa HC dan OC, IC merupakan variabel yang berfungsi mendorong dan memanfaatkan kerja SDM untuk membentuk OC dan OP. Temuan ini memperkuat teori tentang pentingnya manajemen sumber daya manusia di bidang pendidikan melalui aspek pemenuhan kebutuhan pengembangan pengetahuan, dan kompetensi keterampilan yang mengikuti perkembangan. Temuan ini juga memperkuat teori yang menyatakan bahwa faktor pembelajaran dan pertumbuhan mempengaruhi kinerja organisasi sepanjang perspektif proses internal, keuangan, dan pelanggan.

INTRODUCTION

This study aims to investigate the influence of variable human capital (HC), informational capital (IC), and organizational capital (OC) on organizational performance (OP) in the education sector from the perspective of learning and growth. Measuring organizational performance in the education sector has a high urgency because the implementation of education in Indonesia is affected by the development of the Industrial Revolution 4.0 and the Covid-19 pandemic. Moreover, the education sector is the foundation of economic development (Rose, 1994) and education policy is public policy (Bakry, 2010).

Revolution Industry 4.0 which has been accelerated by the Covid-19 Pandemic has greatly affected multiple sectors including the education sector (Darma, Ilmi, Darma, & Syaharuddin, 2020; Rulandari, 2020; Yousef Obeidat, Bahjat Abdallah, Osama Aqqad, Akhoershiedah, & Maqableh, 2017). The phenomenon has greatly affected the way education is delivered, the way people work, and how the organization operates. It leads to new uncertainties and challenges arising for an organization, especially for human resource management. The organization needs to continue to look after its employees, including maintaining an exchange of information and mutual understanding within teams that will lead them in a good direction and have a maximum level of performance to achieve organizational goals.

According to Moeheriosono as cited in Aditama & Widowati (2017), performance is a description of a level of achievement in the implementation of an activity program that aims to realize organizational goals and objectives that have been planned
through an organization’s strategic planning. Added by Rummler and Brache, organizational performance is “the achievement of results at the level or unit of organizational analysis” (Sudarmanto, 2009). Meanwhile, according to Risnawati, Satriadi, Selvi Fauzar, Hasnarika, & Rapida Nuriana (2022), organizational performance is the “organization’s ability to carry out every task given to the organization to achieve the goals, objectives, mission, and vision of the organization that has been determined as well as emphasizes the implementation process and resources to achieve its goals”.

Achievement of Organizational Performance is influenced by several factors, one of them being human resources. There is a large and growing body of literature that shows a positive linkage between human resource development and performance (Ajisafe et al., 2015; Crook et al., 2011; Ebimobowei et al., 2012; Prasetya et al., 2016; Simarmata, 2020). In the Balanced Scorecard (BSC) approach, human resource is the main pillar in achieving organizational performance. Human resource is the main pillar that management must pay attention to maintain competitive advantage (Mohiuddin, Hosseini, Faradonbeh, & Sabokro, n.d.). According to Alex et al. (2014), the success of any organization in the contemporary business world depends on the quality of human resources who initiate and implement policies and programs.

According to (Solkhe & Chaudhary, 2011), human resource is essential for the efficiency and effectiveness of public sector employees, and therefore it is important to maintain a positive future-oriented human resource development. In line with this, (Ali-Coleman, 2019) appointed out that organizations all over the world invest a lot of money in training and developing human resources for the performance of their respective organizations. This demonstrates the importance organizations attach to their human resource in the achievement of their corporate goals.

Likewise, the position of HR at the public organization engaged in education includes University. Human resource in distance education requires specific development (Gaba et al., 2006;
Panda et al., 2006). There are some biggest challenges for HR in the current era including engaging the workforce, attracting talent, managing relationships, training and development strategies, talent retention, embracing inevitable change, as well as employee health and well-being. The education sector is an important public sector to get attention. For the Indonesian people, education is a tool to educate the nation to prosper the nation, as stated in the Constitution of 1945. Regulations on education are regulated in Law Number 20 of 2003 concerning the National Education System, and specifically for higher education are regulated in Law Number 12 of 2012 concerning Higher Education.

Universitas Terbuka (UT) is chosen as the case study as it is the pioneer of the universities that organize their learning with an open and distance higher education model in Indonesia. Since the pandemic Covid-19, online learning has become a reference for learning in the education sector. Thus, as a pioneer in open and distance learning, UT has employed online learning for quite some time and has the expertise as it becomes a cyber university. In addition, as a state-owned university, UT has the greatest number of students in Indonesia which is spread out throughout Indonesia and abroad (Caesaria, 2021). The number of UT students in 2022 is as many as 412,697 students (Figure 1).

![Figure 1. The proportion of Number of Students Per Faculty Sourced from: ut.ac.id (2022)](image)
A large number of students certainly requires qualified resources in managing IT and other organizational assets in serving the needs of the public (students in particular). UT’s employees (2022) consist of 730 lecturers and 1,787 administrative employees. Its assets are also spread throughout Indonesia as UT has 39 service offices (UPBJJ-UT) spread throughout Indonesia and one Overseas Student Management Center. All these resources need to be managed to yield optimal performance for the organization.

In the education sector, such as UT, the learning and growth aspect deserves attention as an aspect that can be optimized to improve organizational performance. This is considering the large number of students, the limited number of employees, the influence of rapid IT development in the era of the Industrial Revolution 4.0, and the impact of the Covid-19 Pandemic, which gave rise to UT competitors in the implementation of online education.

(Rosmaini & Tanjung, 2019) argues that performance is the result of work achieved by employees in doing their duties by the responsibilities given to them by considering the aspect of quality and quantity. In line with Amitai Etzioni in (Aditama & Widowati, 2017), organizational performance provides an overview of how far an organization can realize its ultimate goals. During the Covid-19 Pandemic, there have been some changes in the way organization operates and it affects how people work, such Work from Home (WFH) policy, remote meetings, and fatigue from unclear work hours during WFH. Thus, it is time to make some positive changes in the ways human resource management in the workplace, especially in higher education.

We extend the work of (Prasetya et al., 2016) who presented a model of how human, information, and organizational capital influence employee performance. There have been numerous studies that examine how human resource management applies in the higher education sector yet not many in open, flexible, distance learning institutions, especially in performance measure-
ment. We aim to contribute to the HR performance measurement literature and practice about how important learning and growth are towards organizational performance in OFDL institutions. Our study is innovative because it provides novel insights into why we should reinforce learning and growth aspects to measure organizational performance in the higher education sector which implements the OFDL system. Unlike traditional universities, the Open University offers an open admissions policy and distance and online learning programs. Open University and distance learning systems aim to reduce social or educational inequalities by providing equal opportunities for those unable to complete their education (S, 2021) Therefore, this reinforces the perseverance to undertake this research.

LITERATURE REVIEW AND HYPOTHESIS FORMULATION (QUANTITATIVE)

The learning and growth perspective is one of the perspectives in the Balanced Scorecard approach that affects the overall performance of the organization. The output of learning and growth is intangible assets, which are in the form of human capital, informational capital, and organizational capital. These assets need to be built and improved to support organizational performance. (Ragoobur & Narsoo, 2021) states that human capital is related to economic growth. (Efendi, 2020) states that human capital is one of the important concepts in the world today. This concept is very influential, especially, although it may not be exclusively, in the field of economics. Human resources are considered to play an important role in the economic growth and prosperity of a country.

Organizations produce core competencies and have scarce, valuable, inimitable, and non-transferable human capital, with this they have greater potential to contribute to achieving and maintaining competitive advantage (Birasnav, Rangnekar, & Dalpati, 2010). Human resources with strong character are characterized by mental capacities that are different from others such
as trustworthiness, sincerity, honesty, courage, firmness, rigidity, strength in holding principles, and other unique traits inherent in him (Tyas & Naibaho, 2020). According to the Cambridge Dictionary, these human resources can be invested as human capital for the sustainability of the organization.

The informational capital aspect is an aspect that plays an important role in maintaining organizational growth in the disruptive era. According to (Niven, 2008), employees must have the ability to access information, especially those related to customers, donors, and stakeholders. This is beneficial in decision-making.

The informational capital aspect is an aspect that plays an important role in maintaining organizational growth in the disruptive era. According to (Niven, 2008), employees must have the ability to access information, especially those related to customers, donors, and stakeholders. This is beneficial in decision-making. In the disruptive era, the ability to access information is needed by the education sector. The world of education must be able to develop industrial transformation strategies by considering the human resource sector that has competence in their fields. This is a challenge for the world of education in preparing the quality of human resources to adapt to industry 4.0. From several studies that have been carried out digitalization trends in the world of education as one of the dominant solutions carried out in facing the industrial revolution 4.0, this is in line with the new pattern found in industry 4.0, namely disruptive and technological (Muktiarni, Widiaty, Abdullah, Ana, & Yulia, 2019).

Organizational capital is the most important aspect that has a role in supporting learning and growth. According to (Niven, 2008), organizational capital is described as we are seeking to draw upon the infinite resources of human strength and capture both “the hearts and minds” of our employees, to make sustainable growth and prosperity a literal reality”. The formation of an organization’s capital takes a long time. These assets are formed from historical review, collective history, and shared cultures that
contain shared values. In the dimension of organizational capital, there are 3 (three) important elements, namely culture, recognition, and rewards, and alignment.

**PERFORMANCE MEASUREMENT IN THE EDUCATION SECTOR**

In the study of BSC development in government and non-profit organizations conducted by Niven (2008), performance variables in the learning and growth perspective are influenced by human capital (HC), informational capital (IC), and organizational capital (OC). These three variables are strongly expected to have a positive influence on organizational performance. The conjecture requires testing by statistical testing methods.

Based on the literature review above, the formulation of the research hypothesis is as follows:

H1: Human Capital positively associated with Organizational Performance

Prasetya et al. (2016) stated that Human Capital aligns people with strategy organization. Human capital is the knowledge, skills, competencies, and attributes embodied in individuals that facilitate the creation of personal, social, and economic well-being. The aspects of human capital that are of most relevance to the organization’s workforce and productivity are formal learning (learning leading to a qualification); non-certified learning (on-the-job training, work experience, or other learning not leading to a formal qualification); foundation skills; management skills and leadership skills (Ajisafe, O.E., Orifa, R.A., & Abosede, 2015). Papadimitriou (2011) affirmed it is investing in the skills and knowledge that faculty and staff need to be outstanding teachers, scholars, innovators, and leaders. It is the stock of knowledge, habits, and social and personality attributes, including creativity, embodied in the ability to perform labor to produce economic value. In addition, the potency of human resources owned by the organization supported by innovation opportunities is an investment for the organization. Combinations of human re-
sources potency and innovation opportunities contribute to the sustainability of the organization by optimizing organizational performance continuously (Fonsesca et al, 2018).

H2: Informational Capital positively associated with Organizational Performance

(Niven, 2008) stated that informational capital (IC) is a variable of learning and growth perspective. IC is one of the variables that function to align strategy to achieve Organizational Performance. From the perspective of learning and growth, in the long term, infrastructure, including IT needs to be built to encourage organizational growth and improvement (Kaplan & Norton, 1996). Therefore, Informational Capital is thought to have a direct influence on Organizational Performance. Intangible resources such as effective management of knowledge improve organizational performance (Mills & Smith, 2011). (Whelan & Carcary, 2011) also stated that the smart management of human resources and the capability to generate, acquire, store, transfer, and apply knowledge will help support organizational goals and objectives. Furthermore, the results of studies on Intellectual Capital show that informational capital influences organizational performance. (Peng, Quan, Zhang, & Dubinsky, 2016) proved the influence of IC on internal business process-mediated by organizational performance and supply chain management capabilities. While (Wagner, 2012) also found Informational Capital and business process effects on the performance of manufacturing companies as well as in the scope of the supply chain management area. However, (Niven, 2008) stated that informational capital did not have a significant effect on organizational capital. This is supported by the research of (Prasetya, Utami, & Prasetya, 2016b) who stated that information by employees of PT PLN (Persero) in the Main Unit of Development VIII Surabaya has been very good but has not been maximized to increase the quantity and quality of employee performance.

H3: Human Capital positively associated with Organizational Capital
Prasetya et al. (2016) stated that Human Capital aligns people with strategy organization. Human capital is the knowledge, skills, competencies, and attributes embodied in individuals that facilitate the creation of personal, social, and economic well-being. The aspects of human capital that are of most relevance to the organization’s workforce and productivity are formal learning (learning leading to a qualification); non-certified learning (on-the-job training, work experience, or other learning not leading to a formal qualification); foundation skills; management skills and leadership skills (Aji-safe, O.E., Orifa, R.A., & Abosede, 2015). Papadimitriou (2011) affirmed it is investing in the skills and knowledge that faculty and staff need to be outstanding teachers, scholars, innovators, and leaders. It is the stock of knowledge, habits, and social and personality attributes, including creativity, embodied in the ability to perform labor to produce economic value.

H4: Informational Capital positively associated with Organizational Capital

According to Kaplan & Norton (2004) informational capital affects organizational performance. Informational capital includes the ability of human resources to access data and utilize networks to obtain the information needed. Niven (2008) also stated the importance of informational capital in influencing organizational performance. Niven (2008) stated that informational capital includes the ability to use, access, and manage information for the benefit of innovation.

H5: Organizational Capital positively associated with Organizational Performance

According to Niven (2008), one of the elements that affect organizational performance from a learning and growth perspective is organization capital. Organizational capital is believed to be a resource capable of transforming and performing organizations. OC is generally regarded as knowledge embedded in organizational routines, structures, systems, culture, values, and processes, thus constituting an important resource for organizational
effectiveness. OC is positively related to organizational performance (Barbieri, Buonomo, & Farnese, 2021). OC is positively related to organizational innovation. Organizational capital, including organizational culture has a significant influence on organizational performance (Marampa, Khananda, & Anggraeni, 2019); (Faith & Hartono, 2007). The hypothesis is illustrated through a relationship model which can be seen in Figure 2.

![Relationship Model Between Variables](image)

**Figure 2. Relationship Model Between Variables**

**RESEARCH METHOD**

This research is causal research that aims to identify the relationship between human capital, informational capital, and organizational capital towards organizational performance. This research uses a quantitative technique which uses questionnaires to collect data to achieve the objectives of the topic under study.

**POPULATION AND SAMPLING**

The sampling technique was carried out through a random sampling technique sent through the Knowledge Sharing Whatsapp Group (WAG) “Berbagi Ilmu” consists of 511 members; WAG Fhisipers consists of 203 members. WAG “Berbagi Ilmu” is a communication media for UT leaders and employees which includes lecturers and education staff, both from central and regional employees. Meanwhile, WAG Fhisipers consists of
all employees at the Faculty of Law, Social, and Political Studies Universitas Terbuka. The returned questionnaires were 135 questionnaires.

**INSTRUMENTATION**

The instrument is composed of BSC theory, especially from the perspective of learning and growth, with specifications of tasks and functions carried out at UT. The variables measured were Human Capital/HC (X1), Informational Capital/IC (X2), Organizational Capital (Y1), and Organizational Performance/PO (Y2). In this study, organizational performance is defined as the efficiency and effectiveness by which organizations undertake investment projects (such as investment in technology, research, and development), and retain their employees or talents to deliver quality service to satisfy their target stakeholders transparently.

Human capital is an effort to manage sources of power or capital owned by the organization in the form of a collection of knowledge, skills, competencies, commitments, and ideas that are unique, rare and valuable, and non-transferable that contribute to generating competitive advantages for the organization, which are managed through the following four things, namely closing skill gap in a strategic position, training the success, recruiting and retaining the right people, develop succession planning. Indicators closing gaps in strategic positions measure the exact competence possessed by employees in certain positions. Indicator training for success includes questions about organizational means in addressing the competencies gap. Indicator recruiting and retaining the right people includes questions about respondents’ views on the importance of hiring the right people. Recruiting and retaining the best employees is required in the human resources development framework. Organizations need to leverage the skills and capabilities of their employees by encouraging individuals to learn and creating a supportive environment in which knowledge can be created, shared, and ap-
plied to achieve the corporate goals of the organization (Ebimobowei et al., 2012).

Information capital is defined as the accumulation of knowledge, intellectual property, and creativity which is an important capital in an organization, where the optimization of its contribution involves the presence of the following three important indicators, namely the ability to use and access information, the ability to apply and manage information and the ability to innovate for the organization. It is an intangible asset.

<table>
<thead>
<tr>
<th>NO</th>
<th>VARIABLES</th>
<th>INDICATORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Human Capital (HC)</td>
<td>Closing skill gaps in strategic positions, training for success</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Recruiting the right people</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Retaining the right people</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Succession planning</td>
</tr>
<tr>
<td>2</td>
<td>Information capital (IC)</td>
<td>Ability to use and access information</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ability to apply and manage information</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ability to innovate</td>
</tr>
<tr>
<td>3</td>
<td>Organizational Capital (OC)</td>
<td>Culture</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Recognition and rewards</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Alignment</td>
</tr>
<tr>
<td>4</td>
<td>Performance Organizational (PO)</td>
<td>Customer satisfaction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Achievement of Programs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Achievement of strategies</td>
</tr>
</tbody>
</table>

Organizational Capital is an organizational resource in the form of historical review, collective history, a shared culture that contains values, common habits whether visible or not, and mutual agreement both in appreciating and assessing something and rewarding something. Organizational Capital indicators include organizational culture, recognition and rewards, and alignment.

The following is a grid of developed instruments. Questions were developed as many as 62 questions, with answers using a 5 Likert scale. The instrument was in five sections: respondents’ data, human, information, organizational capital, and organizational performance. The participants were asked to indicate their
level of agreement or disagreement by choosing from 1 to 5, where (1) Very Inappropriate; (2) Not Appropriate; (3) Enough; (4) Appropriate; (5) Very Suitable.

DATA ANALYSIS

The data collected by researchers on human, information, organization capital, and organizational performance were analysed based on the objective of the study. With the help of the Statistical Product and Services Solution (SPSS) version 16.0, the researchers generated descriptive statistics such as charts, frequencies, and percentages and use them to present the research participants demographic information. The study also used SEM PLS to analyze the relationship between observed variables.

RESULT AND DISCUSSION

PROFILE OF RESPONDENTS

After distributing the questionnaires with multiple approaches, the collected results are 135 respondents. Table 4 shows distribution of age, occupation, and length of service of the respondents.

<table>
<thead>
<tr>
<th>Description</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Job Category</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lecturer</td>
<td>101</td>
<td>75.4</td>
</tr>
<tr>
<td>Academic Staff</td>
<td>34</td>
<td>24.6</td>
</tr>
<tr>
<td><strong>Age Distribution</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;25 y.o</td>
<td>2</td>
<td>1.5</td>
</tr>
<tr>
<td>25-35 y.o</td>
<td>49</td>
<td>36.6</td>
</tr>
<tr>
<td>36-46 y.o</td>
<td>35</td>
<td>25.4</td>
</tr>
<tr>
<td>47-56 y.o</td>
<td>28</td>
<td>20.9</td>
</tr>
<tr>
<td>&gt;56 y.o</td>
<td>21</td>
<td>15.7</td>
</tr>
<tr>
<td><strong>Length of Service</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 5 years</td>
<td>57</td>
<td>43.2</td>
</tr>
<tr>
<td>5-10 years</td>
<td>15</td>
<td>11.4</td>
</tr>
<tr>
<td>11-20 years</td>
<td>28</td>
<td>21.2</td>
</tr>
<tr>
<td>21-30 years</td>
<td>13</td>
<td>9.8</td>
</tr>
<tr>
<td>&gt;30 years</td>
<td>19</td>
<td>14.4</td>
</tr>
</tbody>
</table>
MEASUREMENT MODEL

To ensure that the construct measurements have adequate quality, a measurement model assessment was conducted. The assessment includes factor analysis and measuring indicator reliability. The results show that the outer loadings of items in each construct are higher than the recommended cut-off value of 0.7. In addition, each construct shows internal consistencies (Cronbach’s Alpha) that meet the minimum value of 0.7. Furthermore, average variance extracted (AVE) results of more than 0.5 for each construct suggest that the discriminant validity of constructs has been established. The full results regarding the assessment of the measures are shown in Table 3.

Table 3. Construct Validity and Reliability

<table>
<thead>
<tr>
<th>Constructs &amp; Items</th>
<th>Loading s</th>
<th>Cronbach’s Alpha</th>
<th>CR</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Human Capital Context</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Closing skill gaps in strategic positions, training for success (XA)</td>
<td>0.819</td>
<td>0.911</td>
<td>0.720</td>
<td></td>
</tr>
<tr>
<td>Recruiting the right people (XB)</td>
<td>0.803</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retaining the right people (XC)</td>
<td>0.916</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Succession planning (XD)</td>
<td>0.854</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information Capital</td>
<td>0.819</td>
<td>0.892</td>
<td>0.735</td>
<td></td>
</tr>
<tr>
<td>Ability to access information (XE)</td>
<td>0.873</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to manage and apply information (XF)</td>
<td>0.888</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability to innovate (XG)</td>
<td>0.808</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organization Capital</td>
<td>0.911</td>
<td>0.944</td>
<td>0.849</td>
<td></td>
</tr>
<tr>
<td>Culture (XH)</td>
<td>0.896</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recognition and rewards (XI)</td>
<td>0.942</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alignment (XJ)</td>
<td>0.925</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organization Performance</td>
<td>0.941</td>
<td>0.958</td>
<td>0.850</td>
<td></td>
</tr>
<tr>
<td>Realization of organizational plans (Y1)</td>
<td>0.943</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strategy (Y2)</td>
<td>0.915</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service Orientation (Y3)</td>
<td>0.927</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partnership (Y4)</td>
<td>0.902</td>
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</tbody>
</table>
Having assessed the measurement model and evaluated its results, data analysis continues with an assessment of the structural model to evaluate hypothesized relationships between constructs and predictive capacities of the conceptual model.

**STRUCTURAL MODEL ASSESSMENT**

After conducting PLS-SEM analysis, we evaluated the hypothesized relationships as well as path coefficients between constructs. The results as indicated in Figure 3 suggest the positive effects of three contextual constructs, namely human capital, information capital, and organization capital on organizational performance. Figure 3 shows that human capital positively affects organisational capital (0.361), information capital positively affects organisational capital (0.540), and organisational capital positively affects organisational performance (0.431). Among the three constructs, information capital holds the strongest influence on organisation performance.

![Figure 3. Measurement model assessment](image)

In terms of the predictive capacity of the model, the $R^2$ values are evaluated for the predicted constructs (see also Figure 3). As suggested by (Hair et al., 2014), the cut-off points used for assess-
ing the $R^2$ values were 0.25 (described as weak), 0.50 (described as moderate), and 0.75 (described as substantial). Based on the PLS algorithm, the results show that the $R^2$ for organization capital is 0.711 and 0.738 for organizational performance. This suggests that human capital and information capital explain 71.1% of the variance of organization capital, and human capital and information capital through organization capital explain 73.8% of the variance of organizational performance. This suggests that the conceptual model holds moderate predictive capacity in explaining organizational capital and organizational performance.

To be considered significant, the magnitude of path coefficients should be more than 0.1 (Andreev et al., 2009; Mohamed et al., 2018). In this case, all path coefficients in contextual constructs in the structural model satisfy this criterion (refer to Table 4).

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Path</th>
<th>Coefficient</th>
<th>T-Statistics</th>
<th>P-Values</th>
<th>Supported</th>
</tr>
</thead>
<tbody>
<tr>
<td>$H_1$</td>
<td>HC $\rightarrow$ OP</td>
<td>0.355</td>
<td>3.271</td>
<td>0.001</td>
<td>Yes</td>
</tr>
<tr>
<td>$H_2$</td>
<td>IC $\rightarrow$ OP</td>
<td>0.141</td>
<td>1.364</td>
<td>0.182</td>
<td>No</td>
</tr>
<tr>
<td>$H_3$</td>
<td>HC $\rightarrow$ OC</td>
<td>0.361</td>
<td>4.699</td>
<td>0.000</td>
<td>Yes</td>
</tr>
<tr>
<td>$H_4$</td>
<td>IC $\rightarrow$ OC</td>
<td>0.540</td>
<td>7.690</td>
<td>0.000</td>
<td>Yes</td>
</tr>
<tr>
<td>$H_5$</td>
<td>OC $\rightarrow$ OP</td>
<td>0.431</td>
<td>4.635</td>
<td>0.000</td>
<td>Yes</td>
</tr>
</tbody>
</table>

To further examine the model’s hypotheses, t-statistics are evaluated. As shown in Table 6, four of the hypotheses, namely human capital towards organizational performance ($H_1$), human capital towards organization capital ($H_3$), information capital towards organization capital ($H_4$), and organizational capital towards organizational performance ($H_5$) were strongly supported. Only $H_2$ is rejected, as its t-statistic is lesser than 1.96 and the p-value is more than 0.05.

As shown in Table 6, one of the hypotheses, namely informational capital towards organizational performance ($H_2$) was not as strongly supported. The results show that although the infra-
structure has been readily available and supportive, it is still not maximized to boost innovation either for self-development, career, and institution. The influence of information capital on organizational performance is argued by previous research. (Soewarno, 2013) found that the information capital variable as an intervening variable has no significant effect on employee performance as few companies merely apply the balanced scorecard to measure performance through the information capital construct. In addition, (Prasetya, Utami, & Prasetya, 2016c) found that information capital is not significant to organizational performance due to the informational usage by employees was not optimized to level up the quantity and quality of employee performance even though the employees have used the information.

Furthermore, it is noted that among the contextual constructs, the information capital (IC) context has a stronger influence than the human capital (HC) context on organization capital (OC). It also shows that organizational capital (OC) has the strongest influence on organizational performance (OP) compared to the other constructs. This implies the importance of the organizational capital (OC) underlying organizational performance (OP) for higher education, particularly Universitas Terbuka. The purpose of this study is to identify whether organizational performance in the education sector could be improved through a learning and growth perspective, which involves constructs of human capital, information capital, and organizational capital. As a result, the study’s findings demonstrate that organizational performance in the education sector can be improved directly through human capital and organizational capital, while the impact of informational capital on organizational performance is indirect through organizational capital.

**DISCUSSION**

Human resources are the most important aspect of the organization. Organizations need effective HR management to ob-
tain the benefits and sustainability of the organization itself. Organizations need to grow and develop if they do not want to be devastated by increasingly challenging circumstances in the future. Learning and growth is a review of performance developments in the HR aspect. The concept of learning was popularized by a learning organization (Garvin, 1993). A learning organization is an organization that never stops encouraging its members to continuously improve their abilities to realize a better future (Senge, 1990). Even (Kim, Yu, & Park, 2017) emphasize the importance of collective learning in organizations. Here it can be interpreted that learning is prioritized as part of team-work, with the hope that the organization will grow and develop which is carried out consciously and imbued collectively.

In the education sector, learning and growth are also priorities in the development of human resources which will certainly support the overall performance of the organization. Niven (2008) distinguishes organizational orientation based on profit and non-profit/government. The orientation of non-profit organizations/government is a priority in public services for citizens, including educating the nation while in non-profit organizations is shareholder satisfaction. Although non-profit organizations are not oriented towards human resources is the most important aspect of the organization.

In terms of learning and perceptive growth, three variables affect organizational performance in the education sector. The most powerful variables are organizational capital and human capital which are supported by information capital.

**HUMAN, INFORMATIONAL, AND ORGANIZATIONAL CAPITAL**

Overall, the results imply that from the perspective of learning and growth in performance measurement in the education sector, especially at UT, it shows that human capital and organizational capital influence improving organizational performance.

The Human Capital variable consists of training for success,
recruiting the right people, retaining the right people, and succession planning. The study conducted by (Fonseca, Faria, & Lima, 2018) shows that human capital combined with innovations carried out consistently and continuously will maintain organizational sustainability and optimize the performance of organization capital. The driving elements of innovation are employee-manager job satisfaction, commitment to the organization, and willingness to change (Lenihan, Mcguirk, & Murphy, 2019). Moreover, this result is also in line with the findings of (Lutz, Goujon, & Wils Anababette, 2008) that stated Investing in a person’s education and professional development pays off handsomely.

The findings also show that organizational capital has a direct influence on organizational performance. The Organizational capital variable consists of culture, alignment, recognition, and reward. This is in line with the research of (Marampa, Khananda, & Anggraeni, 2019) which stated that organizational culture is a crucial part of the organization’s life as it determines how everything happens in the organization and has a significant impact on organizational performance. In addition, this is also in line with the research of (Iman & Hartono, 2007) who stated that there is a significant impact of strategic alignment on organizational performance.

On the other hand, although information capital does not directly affect organizational performance, it will improve organizational performance through organizational capital. Information capital consists of the ability to use and access information, the ability to apply and manage information, and the ability to innovate. The indirect impact of information capital on organizational performance could be explained by the research of (Pashutan, Abdolvand, & Harandi, 2022) which stated that if IT investments are managed properly, they can create value for the organization. Thus, he found that strategic alignment and IT management are effective on organizational performances moderated by environmental uncertainty. IT investment cannot stand
alone contribute to organizational performance, thus requiring IT management and managers should develop IT resources to develop strategies based on their perceived level of environmental uncertainty.

Additionally, based on the results of his study, (Hoogendoorn, van der Zwan, & Thurik, 2019) stated that the automation of manufacturing technology, and the computerization of work have moved most of the human resources, causing a new reconfiguration. However, on the other hand, the latest technology will lead to the creation of new jobs, and there will be new production areas. Human capital today is the only type of capital capable of performing complex and customized production tasks. Training with employees is necessary for new technologies. These results are reinforced by (Allen, Yiming, Guoqian, & Frank, 2019) who found the concept of combining intelligent machines, with the support of the internet with human actors, will result in a high agility value chain. Moreover, Sowarno (2013) stated that the information capital variable as an intervening variable does not have a significant effect on employee performance. This is because only a few companies use the balanced scorecard to measure performance through informational capital variables. This was also conveyed by Pashutan et.al (2022); Allen et.al (2019) who said that informational capital, which is supported by IT advances, is an investment that will affect organizational performance, although this influence is not directly on organizational performance but must be combined with reliable human capital.

Thus, the automation of technical capital has produced high-quality products and services, including in them the results of products and services in the field of education. At UT, learning services leveraging IT have long been developed since the early 2000s. With the increasing number of students and the location of services reached by UT, the presence of IT is very supportive in producing educational products and services. The Covid-19 pandemic has encouraged the implementation of education at
the primary, secondary, and higher levels to organize online learning. However, online learning carried out during the Covid-19 Pandemic has not been included in the automation stage, but only moved the study space into applications such as zoom, Google Meet, or MS Teams. Automation in education is still contradictory for some people, as it goes against the formation of human character. However, in mass learning, automation in learning is not a taboo thing to implement.

Human capital does not stand alone and needs to be combined with information capital to form a strong organizational capital. This is in line with the findings of (Rahmikawati, Nelly, Susanti, Syamsuddin, & Arsyad, 2022) who state that human capital development in the organization can increase employees’ abilities and knowledge in a sustainable and planned manner.

In relation to the empirical findings, since UT was founded, the use of media in learning has been very important, considering that the learning delivered to students is carried out by remote methods. Lecturers, as developers of learning materials, are required to study various learning media to be delivered to students. One of the determining aspects of success in developing media-based learning materials is the ability to access information and media. Those capabilities are a must-have for learning developers. Therefore, the ability to access information is an information asset as well as the ability of UT’s human resources. Since 1984, various learning media have been developed by UT. There are four forms of learning media, namely print, audio-visual, practicum, and interactive media. Printed learning media in the form of modules, guidelines, and study guides. Audio-visual media in the form of cassettes, CDs, radio/TV tutorials, interactive video, and Computer-based interaction. Meanwhile, interactive learning media is face-to-face (webinars, study groups), and remote (telephone, teleconference, audio, video, and interactive TV. The basic idea of utilizing media in learning at UT is the philosophy of distance learning itself that knows no boundaries of time and space, students are spread all over the world,
and learning can be done anywhere and anytime.

The measurement results of SEM PLS show that UT’s organizational capital is very strong, which is indicated by adequate work culture, recognition, and rewards, and the existence of goals that are aligned between employee goals and UT goals. UT has core organizational culture values called KIIARA (Kualitas/Quality, Integrity, Innovation, Accessibility, Relevance, and Accountability). In addition, the optimization of human capital performance is carried out by combining complementary knowledge and skills from new and incumbent employees, an organization can increase its human capital resources, which in turn enables it to achieve competitive advantages (Wang & Zatzick, 2017). This is a challenge for UT and perhaps most of the educational institutions in fusing the knowledge and skills of the younger generation with its seniors.

OPTIMIZING ORGANIZATIONAL PERFORMANCE IN THE EDUCATIONAL SECTOR

Looking at the survey results, organizational capital supported by human and information capital has a positive influence on UT’s performance. That is, the UT system in terms of learning and growth is doing well. Viewed from the managerial perspective of educational institutions, particularly open and distance education such as UT, rapid environmental change requires UT to be adaptive and agile. Therefore, to support organizational performance, UT not only developed Open Distance Learning (ODL), but more than that, UT must start adopting the concept of Open Flexible Distance Learning (OFDL).

Organizational performance is determined by customer satisfaction, program success, and strategy. In terms of customer satisfaction, the fundamental problem faced by open and distance education students is that in addition to lower final score results compared to face-to-face students, the student’s mental readiness factor is the focus of attention. The biggest risk in implementing ODL so far is that students’ scores on final exams are lower than
in face-to-face universities, as found by (Awad & Refae, 2020). The results of research conducted by (Son, Hegde, Smith, & Wang, 2020) on the problems of students who learn by relying on multimedia during the Covid-19 period are excessive stress, difficulty concentrating and feeling alone in learning. Fresh graduate students tend to experience this problem when they are asked to study independently, such as the concept of distance learning. Students who are already working, probably won’t have this problem. In dealing with these problems, UT has a program Orientasi Study Mahasiswa Baru/OSMB or New Student Study Orietasi (OSMB) program.

In terms of the successful aspects of programs aimed at the community, all study programs have received certification from certification bodies, both nationally and internationally. Quality Assurance (QA) is the focus of the implementation of learning. UT has two models, namely QA in the field of Distance Learning Management/Manajemen Pembelajaran Jarak Jauh (MPJJ) and Academic Management /MA. MPJJ aims to ensure the quality of the learning process carried out with various media and distance methods, while MA aims to ensure the quality of academic products produced by lecturers and study programs. In addition to the consistent application of QA, the success of this program is demonstrated by the diversification of various learnings, both learning in academic and certified education, such as the MOOCs and Continuing Education programs. Diversification of learning programs demonstrates an understanding of flexibility in learning. This effort is in line with the government’s program in increasing the gross participation rate (APK) of students in obtaining the right to continue higher education in Indonesia.

In terms of the success of the strategy, management has a clear and measurable vision and mission, which is operationalized into long-term, medium, and annual plans. Management carries out strategy evaluations annually in the Management Review Meeting mechanism, which is a forum for evaluating organiza-
nitional performance achievements.

Based on the description above, the learning and growth perspective has a significant role in supporting organizational performance, in addition to internal and financial process factors such as the BSC approach. The result of this study shows that the education sector needs to adjust to a rapidly changing environment, especially after the Covid-19 Pandemic. The Covid-19 pandemic has forced the education sector to utilize Information and Communication Technology in designing learning for its students.

From the perspective of learning and growth, improving organizational performance in the education sector can be done by preparing human resources to become qualified human capital. In this case study, the continuous aspect of collective learning is a recommendation to overcome knowledge gaps and the knowledge transfer process between senior and junior employees. Collective learning is useful for optimizing human capital, especially the ability to access and utilize information to develop organizational innovation. In addition, the education sector can also leverage IT to create flexible learning, which in this case is called Open Flexible Distance Learning (OFDL).

In general, the learning and growth perspective contributes to preparing reliable human resources, in the face of a rapidly changing and disruptive environment. The implications of the development of OFDL have the potential to contribute to the literature to improve organizational performance in the education sector.

CONCLUSION

This study concludes that the achievement of organizational performance in the education sector must pay attention to the factors of human capital, information capital, and organizational capital. Human and organizational capital directly affect organizational performance. Meanwhile, information capital has an indirect influence on organizational performance but through
organizational capital. Changes in the external environment, which are rapid and unpredictable such as the Industrial Revolution 4.0 and the Covid-19 Pandemic, have opened insights to adjust to environmental developments in the world of education. The best way for the world of education in managing change is to recruit employees who meet the qualifications and competence, manage, and encourage educators to continuously improve their competence and ability to use and access information, the ability to apply and manage information, and the ability to innovate. Organizations also need a work culture, recognition, and reward, as well as an alignment of individual goals with the organization. The collective learning factor is one of the solutions to overcoming the generation gap. This finding reinforces the theory of learning and growth perspectives as one of the perspectives that affect organizational performance.

Considering the current debate about how best to improve organizational performance from a learning and growth perspective, especially in the education sector, we hope that this research encourages further discussion and the development of theories that can help improve our understanding of organizational performance and its relationship to organizational capital, human capital, and information capital. This study has some methodological limitations. Although this study has sought to explain the measurement factors that affect organizational performance from the perspective of learning and growth, it lacks in explaining the contextual factors that influence each of the factors of learning and growth. In addition, as a cross-sectional study, data were collected at a single point in time. Since organizations are dynamic in terms of contextual resources and their organizational performance, there is an opportunity for longitudinal study as future research.

REFERENCES


