

EXPLORING STUDENT PERSPECTIVES ON INTELLECTUAL CAPITAL ROLE WITHIN UNIVERSITY ENVIRONMENTS

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Abstract

Intellectual capital, encompassing human capital, structural capital, and relational capital, holds a vital role in shaping the educational landscape of universities. As universities seek to provide holistic educational experiences, understanding how students perceive the different dimensions of intellectual capital becomes paramount. By understanding how students view intellectual capital, the university can align its resources and efforts to enhance the learning experience. Despite the growing recognition of intellectual capital's significance for improving an organization's value creation, there is a lack of research on intellectual capital in the university context, particularly regarding students' perceptions. Therefore, this study aims to bridge this gap by investigating students' perceptions of human capital, structural capital, and relational capital, thereby providing insights into the role of intellectual capital in contributing to the university's overall reputation. An online questionnaire survey was carried out to 130 students from UiTM Cawangan Negeri Sembilan, Kampus Seremban. The data were analyzed using IBM SPSS Statistics 25 software. Mean score analyses were conducted to evaluate students' perceptions of intellectual capital. The results show that students have overwhelmingly positive views regarding intellectual capital on average. Their perceptions suggest that they not only recognize but also appreciate the importance of human capital, structural capital, and relational capital within the university environment. It signifies a harmonious alignment between the university's offerings and students' expectations. This alignment can lead to many positive outcomes, benefiting students, faculty, alumni, and other stakeholders.

Keywords: human capital, structural capital, relational capital, perception, university

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Introduction

Universities must strive for top-tier performance; thus, they should excel in the creation and widespread sharing of knowledge while actively engaging in activities that promote cultural and social development. As a knowledge-based institution, attracting the finest talent, providing sufficient infrastructure, and producing substantial research publications are crucial to staying competitive in the global market (Krishnaswamy et al., 2023; Mahdee & Teague, 2014). Malaysia has 20 public universities, 36 polytechnics, and 105 community colleges. Apart from the public Higher Education Institutions (HEIs), there are also 434 private HEIs (PHEIs) comprised of 54 universities, 39 university colleges, 331 colleges, and ten international branch campuses (IBC) (Ministry of Higher Education Malaysia (MOHE), 2022). However, the report highlighted the decreasing trend of students' enrolment. From 2010 to 2019, there was an overall increasing trend of enrolment in tertiary education in Malaysia. Nevertheless, the COVID-19 has affected the number of enrolments. By 2021, the number has declined to 1,207,131, a 1.4 percent drop from the previous year. The Covid-19 pandemic has also impacted the graduate employability rate of 1.8% in 2020.

Malaysia's higher education system has undergone numerous shifts and restructuring phases to deliver exceptional quality (Zain et al., 2017). Emphasizing research and innovation, investments in infrastructure, funding, and incentives have fostered a culture of innovation in Malaysia's higher education system. Global engagement through partnerships with foreign universities, international research collaborations, and joint projects with industries have become the main agendas for meeting market demands. Additionally, there is a focus on skills development, integrating soft skills, entrepreneurship education, and vocational training to better prepare graduates for the evolving job market. These transformations align with the socioeconomic and developmental goals the government sets. Higher education is significantly transforming to enhance flexibility, transparency, and competitiveness.

Universities serve as hubs for knowledge generation, encompassing scientific and technical research outcomes, publications, and educational activities like student training and stakeholder collaborations (Handzic & Ozlen, 2011). Consequently, university organizations offer an ideal platform for discussing concepts related to intellectual capital (Angraini et al., 2018). Universities should be filled with brilliant minds to ensure they can create valuable results that bring fresh knowledge and skills. However, challenges faced by the university, such as limited access to quality education, lack of physical and digital infrastructure, research and development quality, and maintaining quality networking with stakeholders, impede not only the teaching and learning activities but also the public image of the university (Ministry of Higher Education Malaysia (MOHE), 2022, Krishnaswamy et al., 2023). Accumulating IC requires time, great effort, and cost; however, achieving a great result, especially for universities, is challenging since they depend more on the accumulation of IC to achieve better performance (Urighuen Aguirre & Avolio Alecchi, 2023). As an organization, the university provides the avenue for IC investigation since IC holds a pivotal role in shaping the educational landscape of universities. Therefore, measuring IC brings managerial, cultural, and organizational changes, and it permits planning and managing intangible resources consistent with the enterprise strategy for creating value (Iqbal et al., 2022; Paloma Sanchez & Elena, 2006). As a knowledge-based institution, universities could benefit from improving the assessment of their intangible assets, performance measurements, allocation of resources, and benchmarking exercises.

Even though several studies have examined the importance of IC, studies on universities are still in their infancy. Limited studies measure intellectual capital's role in Malaysian universities, especially in examining students' views. Therefore, the study aims to bridge this gap by investigating students' perceptions of human capital, structural capital, and relational capital, thereby providing insights into the role of IC in contributing to the university's overall reputation. By understanding how students view intellectual capital, the university can align its resources and efforts to enhance the learning experience.

Literature Review

Intellectual Capital

IC has been defined in many ways by many scholars. IC refers to the collection of intangible assets, including knowledge, skills, expertise, innovation, and relationships, that contribute to an organization's overall value, competitive advantage, and performance (Edvinsson, 1997; Bontis, 1998). Brooking (1996) distinguished IC into four major groups of assets: market assets, infrastructure assets, intellectual property assets, and human-centered assets. Market assets refer to assets that can provide firm power in the marketplace, such as brands, customer base, reputation, distribution channels, etc.

Infrastructure assets include management processes, philosophies, financial systems, and information and technology systems, which assist firms in business operations and communication with other parties. Intellectual property assets are patents, copyrights, design rights, and trademarks protected by law, and finally, human-centered assets comprise the skills, knowledge, and expertise of the employees that do not belong to the firms. As an intangible asset, IC disregards precise quantification and encompasses all non-financial resources that do not find representation on a company's balance sheet (Hamdan, 2018). Knowledge can create IC and has emerged as a significant asset and a crucial competitive advantage for companies that can acquire, retain, and utilize it efficiently (Franco et al., 2023).

IC can be understood through human, structural, and relational dimensions. Human capital revolves around the capabilities of individuals. Human capital represents the individual knowledge stock of an organization as represented by its employees (Bontis, 1998). The knowledgeable, skillful, experienced, and trained workforce is intellectual wealth that can bridge the organization to superior performance. Structural capital, rooted in organizational assets, is referred to as non-human storehouses of knowledge that are owned and controlled by firms, remain in the firms when employees leave the firms after working hours, provide support to employee performance, improve productivity, and strengthen the firm operations (Bontis, 1998; Brooking, 1996).

It includes databases, organizational charts, process manuals, strategies, routines, information systems, and culture. Relational capital refers to managing interactions between the organization and its external environment. It encompasses the trustworthiness and loyalty of stakeholders and the values rooted in the company's relationships. It fosters effective relationships among business partners, leading to knowledge sharing among supply chain members and reducing information asymmetry (Mohammad Shafiee et al., 2024).

Intellectual Capital at University

Universities have a unique role in a knowledge-based economy, focusing on creating, sharing, and using knowledge. They are crucial in the areas of research and applying research findings. Studies have shown that IC in universities is essential for boosting their reputation, rankings, academic achievements, and meeting their goals (Urighuen Aguirre & Avolio Alecchi, 2023). Researchers have conducted several studies of IC in universities. Handzic and Ozlen (2011) examined the perceptions of students and lecturers on the IC in university. They found that the respondents perceived IC as an essential tool for the university, where human capital is the major strength of the university. In another study, Lu (2012) found a positive association between IC and university performance. Similarly, Anggraini et. al. (2018) surveyed the top management and lecturers on the relationship between IC and university performance in Indonesia. The results indicated a significant positive relationship between all the elements of IC and the university's performance. The study has successfully proven that IC is one of the crucial factors that affect the university's performance through the modern management of the elements of IC.

A survey by Ishak et. al. (2014) revealed the positive influence of human capital, innovation capital, structural capital, and relational capital on university performance in Malaysia. Measuring the university performance from the perspective of financial, customer, internal process, and learning and growth, Hassan et al. (2022) examined the association between IC and the performance of ten (10) public universities in Malaysia. The results suggested a significant relationship between IC and university performance. Similarly, a recent study by Urighuen Aguirre and Avolio Alecchi (2023) found a significant relationship between IC and university performance in Ecuador. A total of 815 employees from public and private universities agree on the importance of human capital, structural capital, and relational capital as fundamental resources in bringing competitive advantage to their institutions.

Methodology

Sample and data collection.

This study employs a cross-sectional research design utilizing an online questionnaire survey to investigate students' perceptions of IC. The survey approach offers a cost-effective and efficient means of collecting substantial data from a diverse student population. The participants for this study are undergraduate and postgraduate students currently enrolled at University Teknologi MARA Cawangan Negeri Sembilan, Seremban Campus. Participants were selected using a random sampling method to ensure a representative sample encompassing all faculties, academic levels, and other demographics. Data were collected using an online survey platform, ensuring accessibility and ease of participation.

The questionnaire consists of four parts. Part A measures the respondent's profile, such as gender, faculty, and level of study. Meanwhile, items for human capital, structural capital, and relational capital were measured in Part B, Part C, and Part D, respectively. The measurement scales for all IC elements were adapted from Handzic and Ozlen (2011). To measure the respondents' perceptions, a 5-point Likert scale

ranging from “1 = strongly disagree” to “5= strongly agree” was used in this study. The collected data was analyzed using IBM SPSS Statistics 25 software.

Results And Discussion

Demographic profile

The survey responses of 132 students were usable for data analysis in this study. Table 1 summarizes the demographic details of the students sampled for this study.

Table 1. Demographic profile of respondents

Respondents' characteristics		Frequency	Percentage
Gender	Male	49	37.1
	Female	83	62.9
Age	17-20	70	53
	21-24	53	40.2
	25 and above	9	6.9
Faculty	FSPPP	63	47.7
	FSKM	24	18.2
	FSR	45	34.1
Programme level	Diploma	64	48.5
	Degree	68	51.5
Part	Part 1	9	6.8
	Part 2	49	37.1
	Part 3	31	23.5
	Part 4	13	9.8
	Part 5	22	16.7
	Part 6	8	6.1
Residency	College	81	61.4
	Non-resident	51	38.6

The result shows that female students dominate with 62.9%, and 37.1% of the respondents were male. For the age group, 53% of students were between 17-20 years old, 40.2% were between 21-24, and the remainder were in the 25 and above group. 47.7% of students are from the Faculty of Administrative and Science Policy, 18.2% and 34.1% from the Faculty of Science and Mathematics and Faculty of Sport Science and Recreation, respectively. Many of the students are in Part 2 (37.1%), followed by Part 5 (23.5%), Part 4 (9.8%) and the remainder were in Part 1 and Part 6. Regarding residency, 61.4% stay at college, while 38.6% are non-residents.

Descriptive statistics

Table 2 presents the mean score of each item of human capital, structural capital, and relational capital in the current study. The respondents were asked to indicate their perceptions or opinions concerning IC in UiTM Cawangan Negeri Sembilan Campus Seremban based on a 5-point Likert Scale ranging from “1 = strongly disagree” to “5= strongly agree”. Five items measured human capital, whereas six measured structural and relational capital. For human capital, the mean score for all items indicates that students agreed that the university has a robust human capital. The highest mean score was 4.03, represented by the statement that the university hires high-quality academic staff, followed by the university providing full admin support for academics (3.96). The results suggest that the respondents positively view the university's ability to attract and hire high-quality academic staff. The students found that high-quality educators can significantly impact their learning experiences and contribute to their educational journey. On top of high-quality academic staff, the students perceive the university as supportive of its academic staff by offering comprehensive administrative assistance and having visionary leadership that is forward-thinking and capable of anticipating future trends, challenges, and opportunities. Apart from teaching and learning activities, the students positively perceive the need for academic staff to engage in research activities.

Structural capital refers to an organization's supportive infrastructure, processes, and systems. The structural capital items recorded mean scores as following rankings: library and info services (4.08); practices values that support the vision and mission statement of the university (4.01), infrastructural support for teaching activities (4.01), variety of disciplines (3.97), comfortable culture (3.95) and effective information systems (3.87). These findings indicate that respondents perceive the university's library and information services as comprehensive and meeting their needs effectively. Additionally, the university provides adequate infrastructure to support teaching activities and effective information systems, suggesting a positive perception of the teaching environment. Students perceived the university as having a solid structural capital by offering diverse disciplines, which helped attract students to enroll.

Furthermore, they believe the university's culture contributes to a pleasant and friendly environment, which can substantially impact students, staff, and others' overall experience and well-being.

Table 2. Mean Score for Perception on IC

IC	Items	Mean score
Human Capital	The university has solid and visionary leadership	3.91
	The university hires high-quality academic staff	4.03
	The university provides full admin support for academics	3.96
	Academic staff work with small groups of students	3.70
	Academic staff are motivated to do research	3.90
Structural Capital	A wide variety of disciplines are taught at the university	3.97
	The university has a comfortable culture for all	3.95
	The university has effective information systems	3.89
	The university practices values that support the vision and mission statement of the university	4.01
	The university offers necessary library and information services	4.08
	The university provides relevant infrastructural support for teaching activities	4.01
Relational Capital	High-quality students are attracted to the university	3.89
	University offers expertise to external parties	3.86
	There is a close partnership established with other universities	3.73
	The university encourages academic networking	3.92
	The university promotes a positive public image	4.02
	The university has a good relationship with the community by conducting social activities	3.98

Relational capital measures the value of the relationship between the university and other stakeholders. As demonstrated in Table 2, the students rated higher scores for the role of the university in promoting a positive public image (4.02), conducting social activities with the community (3.98), and encouraging academic networking (3.92). A positive public image is pivotal for reputation and branding, reflecting the university's success in presenting itself as a reputable and valuable institution within the larger community. Besides, the outcome suggests that respondents believe the university offers opportunities for individuals to expand their professional circles, share knowledge, and form valuable connections within their academic fields. The ability to attract potential students and offer expertise to external parties indicates the impact of strong relational capital.

Conclusion

This study investigates students' perceptions of IC, namely human capital, structural capital, and relational capital in Universiti Teknologi MARA Cawangan Negeri Sembilan. The study summarized that students understand and perceive that human capital, structural capital, and relational capital are essential for the university. Regarding human capital, students agree on the significance of quality academic staff, the

support from the higher leaders and administration department, and the motivation in the research activities. Structural capital elements such as information systems, cultural mission, and vision upheld by the university enable the university to outperform other educational institutions and excel simultaneously. As for the relationship between the university and the stakeholders, the students observed the close association with other universities and communities and successfully attracted students to enroll.

The findings of this study offer valuable insights into the university's strengths and areas for improvement. To enhance human capital development, the university should create a supportive environment led by higher leaders and administration departments, offering continuous professional development opportunities, mentorship programs, and incentives for research activities to enhance the quality of academic staff. Human capital growth requires infrastructure and systems; thus, universities must continue investing in information systems and infrastructure that support academic and administrative functions. Besides, the university's cultural mission and vision must be effectively communicated and upheld across all institutional levels to maintain a cohesive and performance-driven environment. Maintaining relationships with the university stakeholders, such as other universities, government agencies, and communities, helps to leverage collaborative opportunities, knowledge sharing, and resource pooling. This relational capital engagement could involve establishing formal partnerships, joint research initiatives, and community engagement programs to enhance the university's reputation and attract prospective students. In summary, as a strategic asset to the university, the creation, development, transfer, and use of IC is a necessary condition for the university's performance.

This study is without its limitations. The study only provides insights into the perception of students on the IC. For future research, it is necessary to investigate the role of IC in explaining the relationship with university performance, considering the growing importance of IC in educational institutions. Moreover, the results are based on students' perspectives on IC. Lecturers, top management, and supporting staff perspectives should also be considered in future studies for better results and generalizability.

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Author Contribution

S Muda – conceptualization, data curation, writing – original draft; CN Che Mohamed – conceptualization, data curation; M Musman – supervision, writing – review & editing; RB Mohamed Sadique – data curation, writing, AH Hussin – data curation, writing

Conflict of Interest

The authors declare there is no conflict of interest.

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