

MANAGING DIGITAL TALENT FOR THE INTERNATIONALIZATION OF MALAYSIAN SMEs IN THE MANUFACTURING SECTOR

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ABSTRACT

As small and medium enterprises (SMEs) increasingly seek to expand their operations beyond domestic markets, the role of digital talent has emerged as a critical factor influencing successful internationalization. Some SMEs may face resistance to adopting digital tools and technologies due to a lack of understanding, fear of change, or inadequate infrastructure. This research problem aims to investigate how the acquisition and management of digital talent can impact the internationalization strategies of SMEs. The sample size in this study was 402. A back-to-back translation was used to create a series of surveys in both English and Bahasa Melayu. Simple random sampling techniques were used to collect data from SMEs and manufacturing companies in Malaysia through email and Google Forms. The data were examined using SmartPLS software version 4.0 to determine the impact of managing digital talent and SME internationalisation on Malaysia's manufacturing industry. The findings demonstrate that managing digital talent has a significant impact on internationalisation in Malaysia's manufacturing industry. The findings of this study provide substantial and useful information to practitioners in the Malaysian manufacturing industry. Malaysian export managers need to consider that outstanding internationalisation is based on excellence in managing SMEs' digital talent.

Keywords: digital talent, internationalisation, SMEs, manufacturing sector

INTRODUCTION

Small and medium-sized enterprises (SMEs) have played a pivotal role in the Malaysian economy, evolving from an agriculture-dominated era to a modern economy driven by manufacturing and services. SMEs are vital for promoting growth through job creation, driving technological and product innovation, and alleviating poverty by providing employment opportunities, particularly in developing and rural areas. Since 2016, the number of SMEs has increased by over 140,000, rising from 1,086,157 to a total that reflects ongoing growth (Department of Statistics Malaysia, 2020). According to SME Corporation Malaysia's insights, SMEs constituted 98.5% of all businesses and contributed 38.9% to the nation's GDP in 2019, employing 48.4% of the workforce with a total of 907,065 businesses (SME Corporation Malaysia, 2020).

Manufacturing is recognized as a primary driver of global economic growth (Ndubisi et al., 2021). Manufacturing SMEs stand to benefit from Industry 4.0 in various ways, including enhanced productivity, efficiency, flexibility, and cost-effectiveness; increased production capacity; improved quality control; and reduced waste, delivery times, and system downtimes. As a result, manufacturing firms must invest in Industry 4.0 to remain competitive in today's global economy. To achieve effectiveness and sustainability, SMEs must consider a blend of critical contextual factors, appropriate technical support, organizational practices, and aligned processes (Alraja et al., 2022). Given the digital revolution and heightened competition for talent, Malaysian SMEs must adopt new strategies to facilitate timely and informed decision-making in a sustainable society. Additionally, manufacturing has the largest multiplier effect on a nation's operations and growth, reinforcing its significance in the Malaysian economy.

Employers across various sectors, particularly Malaysian manufacturing SMEs, are gradually equipping their employees with digital tools. Currently, over half of all employees in typical companies use internet-enabled computers. Most SME manufacturers begin their digital transformation by focuses on administrative and marketing functions, which reveals the significant digital divide between larger firms and SMEs in the context of online government interactions, electronic invoicing, social media use, and e-commerce (Akbari et al., 2021; Toope, 2023). The business landscape is increasingly global, with leading SME companies operating across multiple markets as national and continental borders blur. In this environment, talent is crucial for success. Unlike the past, when resources such as raw materials and capital defined competitive advantage, today, having a skilled workforce is essential for outperforming competitors (Tull et al., 2020; Abdul Samad, 2022).

This study explores the various factors motivating SMEs to pursue export markets through a resource-based lens, particularly focusing on four categories of human and financial capital: general human capital resources, industry experience, managerial capabilities, and the founder's ability to secure financial resources as a contingency against unforeseen challenges. The core principle of the network model emphasizes identifying factors that influence a firm's export performance through SMEs' internationalization, supported by internationalization theory. SMEs must develop new competencies to capitalize on existing opportunities (Child et al., 2022; Uzhegova & Torkkeli, 2022).

LITERATURE REVIEW

Managing Digital Talents

Almost all businesses have been on a roller coaster ride in recent years as they deal with the pandemic COVID-19, which has caused government-sanctioned lockdowns across national boundaries (Tull et al., 2020; Akbari et al., 2021; Toope, 2023). During this period, industries that did not traditionally use technology were compelled to adapt and embrace digitalisation. Malaysia's focus on the digital economy, which includes, among other things, the development of smart communities, is rooted in the same transformative trajectory as the rest of the globe. As smart manufacturing is an additional vital component of the nation's drive, a recent industrial event aimed to examine the current state of smart manufacturing in Malaysia. However, the "pull" characteristics must be highly appealing to job searchers, particularly passive prospects with a large wish list (Tegtmeier et al., 2022).

SMEs that want to improve their business operations today have access to a wide range of technological tools, from big data analytics to cloud-based solutions. While Industry Revolution 4.0 (IR4.0) continues to provide numerous benefits and technical improvements, it also poses significant hurdles for businesses across many sectors, notably manufacturing. With just 11% of Malaysian manufacturing businesses reporting that they have converted the majority of their business processes, digital adoption remains very sluggish in this country (Abdul Samad, 2022). Thus, establishing a successful digital and advanced analytics firm is challenging. Decisions concerning personnel and technology frequently determine the success of a change (Dotson, 2015). The change in the digital economy necessitates the creation of a talent development program geared toward recruiting, acquiring, developing, and using brilliant workers capable of achieving extraordinary business results. Primary responsibilities include talent management coordination in light of global strategy, establishing a unique talent management architecture, and distinguishing strategic roles involving digital skills (Barinova et al., 2019).

"More than anything else, digital transformation requires talent. In fact, putting together the right team of technology, data, and process people who can work together with a strong leader who can drive change may be the most important step a digital transformation company can take. Even the best talent does not guarantee success. However, the lack of it almost guarantees failure" (Davenport and Redman, 2020; p. 1). SMEs in manufacturing companies, particularly in Malaysia, must address critical questions to establish and retain a robust pool of digital talent (Dan et al., 2021; Gilch & Sieweke, 2021), such as:

1. SMEs are required to ascertain the number of digital workers required in the near future, in addition to the number of digital job profiles that are already accessible and comprise the organisation's core digital talent.
2. SME owners must thereafter comprehend how to attract and retain the required personnel in the medium and long run.
3. SMEs must choose which digital talent they should encourage and develop in their current workforce. Without skilled personnel, there can be no digital changes.

Despite being a rapidly expanding discipline, talent management remains the subject of much controversy regarding its conceptual bounds and overall meaning (Collings & Mellahi, 2019). Furthermore, particularly in diverse national and organisational contexts, the efficacy of talent management and its added value to organisations have not been exhaustively assessed. In addition, the organisational setting of major international corporations and multinational enterprises (MNEs) has been the focus of talent management studies (Stahl et al., 2012). However, there are indicators that the issue is no longer confined to large MNEs or large domestic organisations, and that talent management issues and challenges may vary significantly in different types of companies. This suggests that human resource management (HRM) and talent management issues are becoming increasingly important in the SME sector, which has experienced rapid internationalisation in recent years (Festing, 2007). However, few empirical studies have been conducted in this particular domain.

SMEs Internationalisation

There is considerable debate regarding the necessity of broadening perspectives and dismantling geographical barriers in the current economic climate. The internationalization of SMEs appears to validate their significance in today's hyperconnected and globalized world, making the development of a comprehensive understanding of the largest global markets crucial. According to studies by Laufente et al. (2020) and Child et al. (2022), SMEs have often been viewed as passive participants in international trade; however, data indicate that this view is increasingly outdated, especially as many SMEs, particularly in the Malaysian manufacturing sector, have successfully ventured beyond their domestic markets. This advancement aligns with findings from Chiukira (2021) and Ahimbisibwe et al. (2021), who emphasize that SMEs are regarded as the backbone of most global economies. They contribute to over 52% of global output and account for more than 40% of GDP growth in many countries, highlighting the importance of digital talent and internationalization (Troise et al., 2023; Ahimbisibwe, 2023). Furthermore, it can be argued that this trend may represent a new norm in our interconnected, borderless reality. An SME's competitive advantage is cultivated and enhanced through accelerated internationalization, leveraging underutilized resources, fostering new knowledge, capitalizing on network effects, and rapidly commercializing their products or services (Freeman et al., 2010; Uzhegova & Torckeli, 2022). These characteristics reflect the dynamic capabilities of the newly established global firms throughout Malaysia. International growth is not only essential for survival in a challenging economic landscape but may also contribute to overall advancement.

Managing SMEs Digital Talents for Internationalisation

Digital transformation is expected to bring about significant changes, as SME operators must commit to and respond more swiftly, leading to a blurring of business and industry boundaries (Luo, 2022; Nambisan and Luo, 2021). Technologies such as mobile applications, social media, artificial intelligence, the Internet of Things, and remote work have provided SMEs with more flexible tools for expansion and globalization. This has created an unpredictable environment. Investigating the processes of digital transformation during internationalization is crucial for uncovering the nuanced effects of digital transformation on

internationalization processes (Roetzel, 2019; Thrasou et al., 2020). These technological advancements facilitate more integrated supply chains and enhance communication with suppliers, contractors, and partners, while also minimizing physical distances and making it easier to reach markets, users, and potential customers in ways that were previously unimaginable for often underfunded SMEs. Although there is a growing awareness among owners and managers of manufacturing SMEs regarding the necessity of implementing effective digital talent management strategies in developing markets, systematic research on talent management in these contexts remains limited (Bhatnagar, 2007; Scullion & Collings, 2011). Therefore, this research aims to deepen our understanding of the relationship between digital talent management and the internationalization of SMEs in the manufacturing sector in Malaysia.

METHODOLOGY

This study adopted a positivist paradigm. This paradigm generalises knowledge to the entire population by statistically analysing observations pertaining to a readily observable reality. (Perry & Sobh, 2006). Positivism is a research philosophy that operates under the assumption that the objects under investigation possess a stable reality that can be objectively measured from the outside by an observer. In this paradigm, a survey was conducted to meet research objectives.

Population and Sampling

Sekaran and Bougie (2013) defined a population as a collection of individual persons, things, or events of importance that researchers intend to explore at a given point in time. The population of this study consists of manufacturing SMEs in Malaysia. The study used random sampling, as this technique allows every element in a given population to have an equal chance of being chosen as a portion of the sample.

Measurement Items

A set of questionnaires was developed for data collection. The questionnaire was written in two versions, English and Bahasa Malaysia. A back-to-back translation process was used to write the questionnaires. A cover letter was prepared along with the questionnaires to introduce the objectives of the study. A combination of intervals and a nominal scale was produced. All items were adapted from previous studies. The instruments used for digital talent indicators had 29 items adapted from Jayaraman et al. (2018). Whereas the instruments used for internationalisation have 4 items and were adapted from Ruzzier, Antoncic and Hisrich (2007). Respondents were asked to express their level of agreement or disagreement with each statement on a five-point Likert scale. The scale ranges from strongly disagree to strongly agree. Respondents were asked to express their level of agreement or disagreement with each statement on a five-point Likert scale. The scale ranges from strongly disagree to strongly agree.

Data Collection method

The empirical analysis relies on primary data, namely a balanced sample of SMEs located in the Malaysian region. The data used in this study were collected during a broader study on the internationalisation and digital transformation of SMEs in the Malaysian Region, specifically in the manufacturing sector. A structured questionnaire was submitted to a randomly stratified sample of Malaysian SMEs. In the data collection process, the researcher sent the questionnaires through email and forms to the respondents.

Data Analysis

Data analysis was performed using SPSS 29.0 (Statistical Package for Social Science) and Smart PLS-SEM 4.0 (Partial Least Squares Equation Modelling). Missing data, outlier detentions, and cross-loading were treated. The initial stage of data analysis was a series of descriptive analyses. The Smart PLS software was used to answer the research questions. Several analyses were conducted to assess the validity of the constructs. To test convergent and discriminant validity, the correlation matrix for all the observed variables was examined to see how significantly and positively different measures of the same construct are linked to each other compared to measures that are aimed at different constructs.

RESULTS

Reliability and validity are the main criteria for considering good measures in measurement models. The reliability of the data tests the consistency of a measuring instrument with the concept it measures, while the validity of the data tests the degree to which the instrument accurately assesses the intended construct (Sekaran and Bougie, 2010). Following the verification of the construct measures' validity and reliability, the evaluation of the structural model outcomes commenced. The details of the measurement and structural model results are explained in the following sections.

Measurement Model

In this study, the assessment of the constructs' quality was conducted by evaluating the measurement model. Once the factor loadings have been determined, construct reliability and construct validity are established as subsequent steps in evaluating quality standards.

Factor Loadings

The degree to which elements in the correlation matrix exhibit a correlation with a certain main component is referred to as the factor loading. Factor loadings can range from -1.0 to +1.0 with higher absolute values indicating a higher correlation of the item with the underlying factor (Pett et.al., 2003, p299). There was one item in the study whose factor loading fell short of the minimum threshold of 0.60 (Hair et al., 2016). According to Pallant (2001) and Hair et al. (2010), an alpha Cronbach's value greater than 0.6 is seen as indicative of excellent dependability and an adequate index (Nunnally and Bernstein,1994). Therefore, no indicators were deleted, and the factor loadings are presented in Table 1.

ITEM	DIGITAL TALENT	INTERNATIONALIZATION
DTA1	0.64	
DTA10	0.76	
DTA11	0.75	
DTA12	0.75	
DTA2	0.64	
DTA3	0.70	
DTA4	0.69	
DTA5	0.68	
DTA6	0.70	
DTA7	0.66	
DTA8	0.64	
DTA9	0.72	
DTD13	0.67	
DTD14	0.71	
DTD15	0.71	
DTD16	0.71	
DTD17	0.73	
DTD18	0.68	
DTD19	0.66	
DTD20	0.70	
DTD21	0.71	
DTR22	0.70	
DTR23	0.71	
DTR24	0.62	
DTR25	0.72	
DTR26	0.69	
DTR27	0.72	
DTR28	0.68	
DTR29	0.74	
IntBranding		0.96
IntMarketing		0.94
IntProducts		0.93
IntTraining		0.94

Indicator Multicollinearity

Variance Inflation Factor (VIF) statistics were used to evaluate the indicators' levels of multicollinearity (Fornell & Bookstein, 1982). According to Hair et al. (2016), multicollinearity is not a serious issue if the variance inflation factor (VIF) value is below 5. Table 2 presents the VIF values for the indicators in this study and reveals that the VIF for each indicator is below the recommended threshold. However, three factors had a high VIF value above 5. These factors are not deleted because they are reflective items. In fact, when the factors have high VIFs, this indicates high correlations, and therefore, supposedly high reliability.

Table 2 Multicollinearity Statistics (VIF) for indicators

ITEM	VIF
DTA1	3.598
DTA10	4.157
DTA11	3.816
DTA12	3.446
DTA2	4.083
DTA3	2.972
DTA4	2.915
DTA5	2.885
DTA6	2.918
DTA7	2.809
DTA8	2.985
DTA9	3.698
DTD13	3.051
DTD14	3.646
DTD15	3.72
DTD16	3.4
DTD17	3.795
DTD18	3.677
DTD19	3.486
DTD20	3.496
DTD21	3.008
DTR22	3.267
DTR23	3.395
DTR24	2.692
DTR25	3.599
DTR26	3.133
DTR27	3.017
DTR28	2.646
DTR29	2.606
IntBranding	6.627
IntMarketing	5.766
IntProducts	5.35
IntTraining	4.938

Reliability Analysis

According to Mark (1996), reliability is defined as “the extent to which a measurement instrument is stable and consistent. The essence of reliability is repeatability. If an instrument is administered over and over again will yield the same results” (p.285). The two most commonly used methods for establishing reliability include Cronbach’s alpha and composite reliability (CR). The results of both Cronbach’s alpha and composite reliability are presented in Table 3. Cronbach’s alpha ranged from 0.8–0.9, whereas the Composite Reliability statistics ranged from 0.8–0.9. Both indicators of reliability have reliability statistics over the required threshold of 0.70 (Hair et al., 2011). Hence, construct reliability was established.

Table 3 Construct Reliability Analysis (Cronbach Alpha and Composite Reliability)

	Cronbach's alpha	Composite reliability
Digital Talent	0.962	0.967
Internationalization	0.959	0.979

Construct Validity

Sekaran and Bougie (2010) pointed out that construct validity tests how well the results obtained from the use of the measure fit the theories around which the test is designed. Statistically, using PLS-SEM, construct validity was established when there was convergent validity and discriminant validity.

Convergent validity

“Convergent validity is the degree to which multiple attempts to measure the same concept are in agreement. The idea is that two or more measures of the same thing should converge highly if they are valid measures of the concept” (Bagozzi et al., 1991, p.425). When the AVE value is greater than or equal to the recommended value of 0.50, items converge to measure the underlying construct; hence, convergent validity is established (Fornell & Larcker, 1981). Convergent validity results based on the AVE statistics in the current study show that all constructs have AVE values over 0.5. Thus, convergent validity was established. Table 4 presents the AVE values for each construct.

Table 4 Construct Convergent Validity (AVE)

	Average variance extracted (AVE)
Digital Talent	0.485
Internationalization	0.89

Discriminant Validity

“Discriminant validity is the degree to which measures of different concepts are distinct. The notion is that if two or more concepts are unique, then valid measures of each should not correlate too highly” (Bagozzi et al., 1991, p425). According to Fornell and Larcker’s (1981) criterion, discriminant validity is established when the square root of the AVE for a construct is greater than its correlation with all other constructs. In this study, the square root of AVE (in Bold and Italics) for a construct was found to be greater than its correlation with the other constructs (Table 5). Hence, it provides strong support for the establishment of discriminant validity.

Table 5 Discriminant Validity- Fornell and Larcker Criterion

	Digital Talent	Internationalization
Digital Talent	<i>0.485</i>	
Internationalization	0.251	<i>0.89</i>

Structural Model

After conducting an assessment of the measurement model, the subsequent step involved examining the structural path to determine the statistical significance of path coefficients, which represent the links among the study constructs. The path loadings between the constructs were examined to identify significance using computed T-statistics. All data were subjected to 500 bootstrapped samples for significance testing and path analyses were performed to examine the derived hypotheses.

Table 6 shows the direct relationship between digital talent and internationalisation in Malaysia’s manufacturing sector. The table shows that digital talent is positively related to internationalisation in Malaysia’s manufacturing sector. Furthermore, H1 evaluates whether Digital Talent (DT) significantly affects Internationalization (INT). The results reveal that digital talent has a significant impact on internationalisation (INT) (B= 0.262, t=5.769, p=0.000). Hence, H1 is supported.

Table 6 Direct Relationship

Hypotheses	B	SE	t	P value	Results
H1: DT -> INT	0.262	0.045	5.769	0.000	Supported

Note: B= Beta Coefficient, SE= Standard Error, t= t-statistics, p= probability value *Relationships are significant at P<0.001, DT: Digital Talent, INT: Internationalization

DISCUSSION

The internationalization of small and medium enterprises (SMEs) is becoming increasingly dependent on the capabilities and expertise of digital talent. In today’s interconnected and highly competitive global business environment, the ability of SMEs to effectively leverage digital skills has emerged as a critical factor influencing their success in overseas markets.

Enhancing Competitive Advantage

Digital talent empowers SMEs by providing the essential skills needed to utilize technology proficiently. This results in streamlined operations, increased productivity, and better-informed decision-making processes. In the challenging landscape of international markets, having a workforce skilled in digital tools—such as data analytics, social media marketing, and e-commerce—offers SMEs a substantial competitive advantage. By harnessing digital insights to analyze market trends and consumer behaviors, SMEs are able to develop targeted strategies that resonate with diverse global audiences.

Facilitating Market Entry and Expansion

The integration of digital talent is vital for SMEs aiming to navigate the complexities of entering new markets. Skilled digital professionals can design and execute online marketing strategies that foster brand recognition and connect with potential customers in their target regions. Additionally, digital experts can help SMEs establish e-commerce capabilities, allowing them to sell products or services online and thereby breaking down the geographical barriers posed by traditional marketing and sales methods. This increased accessibility facilitates quicker market entry and expansion opportunities.

Driving Innovation and Product Development

A workforce proficient in digital technologies is pivotal in driving innovation within SMEs. Digital talent can spearhead the development of new products or enhance existing offerings by leveraging cutting-edge technologies, such as artificial intelligence, machine learning, and cloud computing. This innovative capability is essential for SMEs that seek to distinguish themselves in competitive international markets. For example, by utilizing digital tools, SMEs can gain better insights into market demands and consumer preferences, enabling the creation of customized products that address specific needs.

From this study, the importance of digital talent in the internationalization of SMEs cannot be understated. As digital transformation accelerates, SMEs that prioritize investment in and utilization of digital capabilities will be more adept at navigating the challenges of global markets. By cultivating a digitally skilled workforce, SMEs can bolster their competitive advantage, streamline market entry processes, enhance innovation, and build strategic networks, ultimately paving the way for successful internationalization and sustainable growth. Therefore, focusing on the development and effective management of digital talent is crucial for SMEs striving to excel in an increasingly digital and interconnected global economy.

CONCLUSION

This study found that managing digital talent has a significant impact on internationalisation in the SMEs manufacturing sector in Malaysia. It is critical for the internationalisation of SMEs to have access to competent human resources and expertise. Supported by Xiong et al. (2019), enhancing the skills, knowledge, and capacities of the workforce via investment in employee training and development programmes empowers small and medium-sized enterprises (SMEs) to effectively respond to evolving market dynamics and foster innovation. Additionally, small and medium-sized enterprises can grow if they are successful in recruiting and retaining talented individuals. The Malaysian government has created programmes to assist in the development of talent and entrepreneurship. These programs, such as talent recruiting and start-up incubators, can be of value to small and medium-sized enterprises (SMEs) in gaining essential human capital.

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