

Digital Management Accounting Capability and Technology Transfer Intensity: The Mediating Role of Absorptive Capacity and the Moderating Role of Financial Slack

Siti Afiqah Binti Zainuddin

sitiafiqah@umk.edu.my

Universiti Malaysia Kelantan

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Abstract

Technology transfer enables small and medium-sized enterprises (SMEs) to access external technological knowledge, yet the organisational information-processing capabilities that help firms convert such knowledge into transfer activity remain underexplored. This study examines whether digital management accounting capability (DMAC) promotes technology transfer intensity through absorptive capacity (ACAP) and whether financial slack strengthens the ACAP–technology transfer relationship. Using a two-wave firm-level survey of technology-engaged Malaysian SMEs, 400 usable Wave 1 responses were obtained and 381 firms were successfully matched at Wave 2. Confirmatory factor analysis supported higher-order representations of DMAC and ACAP. Structural equation modelling showed that DMAC positively predicts ACAP ($\beta = .787, p < .001$), ACAP positively predicts technology transfer intensity ($\beta = .391, p < .001$), and the direct DMAC–technology transfer path remains significant ($\beta = .297, p = .001$). The bootstrapped indirect effect is also significant ($\beta = .309$, 95% bias-corrected CI [.177, .455]), indicating partial mediation. Financial slack has a positive main effect on technology transfer intensity but does not significantly moderate the ACAP–technology transfer relationship ($\beta = -.056, p = .182$). The study positions digital management accounting capability as part of the organisational infrastructure of technology transfer and distinguishes knowledge-processing capability from financial-resource availability.

1 Introduction

Technology transfer allows firms to acquire and use technology that has been created outside of their own organisation. External technology is particularly salient for SMEs as they tend to have lower levels of R&D, specialist skills and funds compared to larger firms. By engaging in technology transfer firms can learn quicker, develop new products and improve upon existing ones and gain access to universities, public sector and other providers of technology. With this in mind The Journal of Technology Transfer has recently started publishing papers that look at the recipient side of technology transfer at a firm level and look at what capabilities firms need in order to undertake technology transfer. As well as looking at universities, public sector and innovation systems (Cunningham & O'Reilly, 2018; Adomako & Nguyen, 2024; Abid et al., 2025).

However just because firms can access external technology doesn't mean that they will be able to transfer that technology into their organisation. They may collaborate on projects and have access to technology but be unable to understand the effects this technology could have on their firm, coordinate activities within the firm and apply that technology in a useful manner. Technology transfer requires recipients to be able to gather information from the environment around them and work out what the monetary outcomes would be if they applied a piece of technology to their business. They must also coordinate activities across different departments of the firm and be able to link information gained from the external world with current processes inside their firm. This becomes more difficult when there is uncertainty surrounding a technology.

As mentioned earlier uncertainty creates higher information processing demands on an organisation. Organisational information processing theory states that when an organisation is faced with increased uncertainty it will require higher levels of information processing and will develop mechanisms to cope with these demands (Galbraith, 1974; Tushman & Nadler, 1978). One such mechanism that could aid technology transfer is management accounting. Management accounting can provide information that is wide in scope, up-to-date and allows aggregation of information about the alternatives available to an organisation (Chenhall & Morris, 1986). If these characteristics of information are provided through the use of digital technologies then management accounting can be seen as a capability.

This study conceptualises this capability as digital management accounting capability (DMAC): the digitally enabled capacity of a firm to provide broad-scope, timely, aggregated, and integrated management accounting information for managerial decision-making. The argument is not that Chenhall and Morris (1986) developed a DMAC scale; rather, their established management accounting information characteristics provide the conceptual foundation from which the present study operationalises a digitally contextualised organisational capability. This framing responds to the growing technology-transfer literature on digitalisation while moving beyond broad digital transformation measures toward a specific information-processing capability embedded in management decision systems.

A second challenge is explaining how such information capability becomes relevant to technology transfer. The study proposes absorptive capacity (ACAP) as the key mechanism. ACAP refers to the organisational capacity to acquire, assimilate, transform, and exploit external knowledge (Cohen & Levinthal, 1990; Zahra & George, 2002; Flatten et al., 2011). Digital management accounting information may improve managers' ability to recognise valuable technological opportunities, interpret their economic and operational implications, coordinate internal knowledge, and decide how external knowledge should be applied. If this reasoning is correct, DMAC should influence technology transfer principally through its contribution to ACAP rather than through an automatic direct effect.

The study also examines the role of financial slack. Technology transfer often requires financing for technology acquisition, testing, adaptation, licensing, staff training, implementation, and commercialisation. Financial slack can provide discretionary resources that allow managers to pursue opportunities without immediately displacing routine operations (Atuahene-Gima et al., 2005; Tan & Peng, 2003). Prior JTT research has explicitly identified resource-related factors, including slack, as a promising extension of capability-based technology-transfer models (Adomako & Nguyen, 2024). The present study therefore tests whether financial slack strengthens the relationship between ACAP and technology transfer intensity.

The empirical setting comprises technology-engaged Malaysian SMEs. Malaysia provides a useful emerging-economy context in which firms interact with universities, public research organisations, government technology agencies, private technology providers, and industry partners while simultaneously facing financing and capability constraints typical of smaller firms. The study uses a two-

wave firm-level survey design. Wave 1 measures DMAC, ACAP, financial slack, and controls; Wave 2 measures technology transfer intensity. Of 400 usable Wave 1 firms, 381 were successfully matched at Wave 2.

The study makes four contributions. First, it introduces management accounting information capability into technology-transfer research as part of the recipient firm's organisational infrastructure. Second, it identifies ACAP as the mechanism translating DMAC into technology transfer. Third, it extends OIPT by showing how a specific managerial information capability contributes to the absorption and application of external technological knowledge. Fourth, it separates capability and resource effects by showing that financial slack matters directly for technology transfer but does not necessarily amplify the effect of ACAP. These findings refine current understanding of digitalisation, organisational capability, and resource availability in technology-transfer processes.

2 Theory and hypotheses

2.1 Technology transfer as an information-processing challenge

Technology transfer is not limited to simply buying technology or licensing IP. There are various forms of technology transfer which include collaborative research, resolving technical issues, transferring knowledge and know-how, testing and consultancy, adapting technology and commercialisation of technology (Gopalakrishnan & Santoro, 2004; Cunningham & O'Reilly, 2018; Adomako & Nguyen, 2024; Ferrer-Serrano et al., 2025). Each of these will create an information processing requirement for the receiving firm. The firm will need to process new information it is unfamiliar with, determine if it is technologically compatible with its current technology and organisationally compatible. Determine how much it may cost them and what the potential gains could be. Work across different business functions and make decisions under uncertainty. Therefore, research on technology transfer has come to acknowledge that the recipient needs to have certain capabilities to successfully receive technology (Cunningham & O'Reilly, 2018; Adomako & Nguyen, 2024).

Organisations need to develop the ability to process information according to the level of uncertainty and interdependence they encounter (Galbraith, 1974; Tushman & Nadler, 1978). With technology transfer you will encounter higher levels of uncertainty and interdependence. The level of uncertainty may be caused by not knowing what effect a technology may have on your firm technically and commercially. Interdependence may occur when transferring and commercialising technology you need to make decisions that may affect many areas within your organisation i.e. Finance, Technology, Operations etc. When digitalisation is introduced, there will be more information to process and may increase these information processing requirements (Galbraith, 1974; Tushman & Nadler, 1978; Adomako & Nguyen, 2024; Salem et al., 2026). Therefore, having the ability to produce decision relevant information should allow a firm to process technology better.

The firm will have to learn to overcome uncertainty and link technology to their business functions and be able to make informed decisions. It has been found that digitalisation can help firms transfer more technology. However, having more digitalisation does not always mean you will transfer more technology (Adomako & Nguyen, 2024; Ferrer-Serrano et al., 2025). Research has also shown that digital accounting and implementing accounting technology can provide decision support to SME's (Zainuddin et al., 2025a; Zainuddin et al., 2026a). Which leads us to believe that DMAC can be used as a measure of information processing.

2.2 Digital management accounting capability and absorptive capacity

There are various types of management accounting information systems which vary in terms of how broad, how timely, aggregated and integrated the information is. Information that is more broad includes outside of an organisation, non financial information and may be forward looking. Timeliness refers to how quickly and often information is available to users. Aggregated refers to how information is summarised and analysed over time or for different alternatives. And integrated refers to how information is combined across the organisation (Chenhall & Morris, 1986). All of these information characteristics are useful when trying to make sense of outside changes in an organisations environment (Chenhall & Morris, 1986; Galbraith, 1974; Tushman & Nadler, 1978). Digital technologies can help to improve on these characteristics of information by allowing for more access to information, connectedness, quicker analytics and integrating accounting with other forms of organisational information (Zainuddin et al., 2025a; Zainuddin et al., 2026a).

These information characteristics can aid each aspect of ACAP. More broad information will allow a firm to know what external changes may be applicable to their organisation and where they can find this knowledge. More timely information can help them recognise and interpret these changes quicker. More aggregated information can allow for managers to analyse the pros and cons of adopting new technology. And more integrated information can link newly found knowledge to other areas of the organisation. This theory makes sense as there are many aspects to ACAP (Cohen & Levinthal, 1990; Zahra & George, 2002; Flatten et al., 2011). As well as previous literature surrounding digital technologies within accounting has shown that accounting information is now helping to provide decision support and integrate information across an organisation (Zainuddin et al., 2025a; Zainuddin et al., 2026a). Therefore if a firm had higher levels of DMAC they would have higher levels of ACAP.

The proposed relationship is therefore capability-based rather than purely technological. Digital tools may expand information availability, but the strategic value of that information depends on whether it is structured in ways that support managerial interpretation, comparison, coordination, and action. ACAP research similarly emphasises that prior knowledge structures and organisational routines determine whether externally available knowledge can be recognised and used (Cohen & Levinthal, 1990; Zahra & George, 2002; Flatten et al., 2011). In this sense, DMAC can be viewed as an information infrastructure that increases the organisation's capacity to perform the knowledge-processing activities underlying

ACAP, a proposition also consistent with the growing literature on technology implementation in accounting (Zainuddin et al., 2025a; Zainuddin et al., 2025b).

H1

Digital management accounting capability is positively associated with absorptive capacity.

2.3 Absorptive capacity and technology transfer intensity

External technological knowledge has limited value unless recipient firms can understand and apply it. ACAP provides the organisational routines through which firms identify useful knowledge, assimilate it into existing cognitive structures, transform it through recombination, and exploit it commercially or operationally (Cohen & Levinthal, 1990; Zahra & George, 2002; Flatten et al., 2011). These routines are directly relevant to technology transfer because transfer activities require a recipient to engage actively with knowledge rather than merely receive it. Technology-transfer research has long distinguished between access to knowledge and the organisational factors that determine whether that knowledge becomes a substantive transfer outcome (Gopalakrishnan & Santoro, 2004; Cunningham & O'Reilly, 2018; Adomako & Nguyen, 2024).

Thus, it can be argued that firms with greater levels of ACAP will engage in higher levels of joint technical development, staff interaction, experts, technical services, adaptation, licence and commercialisation. With greater ACAP firms will be able to utilise external knowledge to change their products, processes and commercial uses of technology and will reduce the probability of only having relationships that provide knowledge or are used as window dressing (Cohen & Levinthal, 1990; Zahra & George, 2002; Gopalakrishnan & Santoro, 2004; Flatten et al., 2011). As many SMEs have limited technological knowledge in-house this can play a big role in being able to take advantage of these technology providers and other support organisations (Cunningham & O'Reilly, 2018; Adomako & Nguyen, 2024).

The recipient's level of ACAP can also impact how much a firm transfer. There may be a link to a university or other provider of technology, but the firm may not engage with them on many levels. If they don't have the knowledge to understand what the technology can do and integrate it into their current process, they may not develop any further. Having a higher level of ACAP could allow the firm to interact with multiple methods of technology transfer. Which aligns with ACAP having many different dimensions and technology transfer being impacted by many different variables when working with others (Zahra & George, 2002; Flatten et al., 2011; Gopalakrishnan & Santoro, 2004; Adomako & Nguyen, 2024).

H2

Absorptive capacity is positively associated with technology transfer intensity.

2.4 Digital management accounting capability and technology transfer intensity

DMAC may also have a direct influence on technology transfer. Technology-related decisions require evaluations of expected costs, operational consequences, future demand, implementation risks, and cross-functional resource requirements. A digitally enabled management accounting capability can reduce information delays, make alternatives more transparent, and support coordinated managerial action, functions that are consistent with the decision-facilitating role of broad-scope, timely, aggregated, and integrated management accounting information (Chenhall & Morris, 1986; Galbraith, 1974; Tushman & Nadler, 1978). Recent work further suggests that digital accounting systems can strengthen the speed, accessibility, and decision usefulness of information in SMEs, while digitalisation more broadly can alter the conditions under which technology transfer occurs (Adomako & Nguyen, 2024; Zainuddin et al., 2026a). These benefits may therefore increase a firm's willingness and ability to engage in technology-transfer activities.

It could also be argued that there is a lower probability of the direct path being true compared to the indirect path via ACAP. As information capability does not have the ability to comprehend and take advantage of technology. It merely allows the organisation to process that information to allow technology to be used. There are studies that have begun to argue that just having more digitised tools will not result in better technology transfer (Ferrer-Serrano et al., 2025) and similar arguments have been made within the accounting-technology literature that implementation of new technology relies on various factors (Zainuddin et al., 2025a; Zainuddin et al., 2025b; Salem et al., 2026). Therefore, we still include this path to see if DMAC will have an effect on technology transfer apart from the path of knowledge.

There is reason to believe that DMAC may directly impact technology transfer as well. With information we can become quicker and more sure about making decisions on new technology. We may have more clarity about what we can expect from our cash flow, what benefits or detriments the technology will provide to our business. Which could help us implement technology faster. Although OIPT suggests that by creating structures that allow an organisation to process information they can respond to uncertainties. Therefore, both paths will be tested to see if there is a direct effect of DMAC on technology transfer or if it only works through ACAP (Adomako & Nguyen, 2024; Ferrer-Serrano et al., 2025).

H3

Digital management accounting capability is positively associated with technology transfer intensity.

2.5 The mediating role of absorptive capacity

These arguments would suggest a mediating effect. As DMAC creates an organisations information processing capability. With ACAP creating the routines to process this knowledge from external sources. Which fits with the OIPT theory as it states that when organisations create ways to process information, they allow themselves to deal with uncertainty. And the ACAP theory allows firms to understand external knowledge and use it to their advantage (Galbraith, 1974; Tushman & Nadler, 1978; Cohen & Levinthal,

1990; Zahra & George, 2002). Therefore, if management accounting information is helping increase technology transfer by increasing the firms absorptive capacity, then ACAP should mediate between DMAC and technology transfer.

This mechanism is theoretically important because it distinguishes the availability of high-quality managerial information from the organisational capability to act on that information. It also avoids the assumption that digitalisation automatically creates technology-transfer outcomes. Prior technology-transfer research identifies collaboration as one mechanism connecting digitalisation to transfer, whereas recent evidence also shows that the digitalisation-transfer relationship is not uniformly positive (Adomako & Nguyen, 2024; Ferrer-Serrano et al., 2025). The accounting-technology literature likewise indicates that digital systems create value through their integration into organisational decision and control processes rather than through technology adoption alone (Zainuddin et al., 2025a; Zainuddin et al., 2026a). Instead, digital information capability should matter when it is converted into learning and knowledge-integration capability.

ACAP is therefore positioned as the organisational bridge between information availability and transfer activity. DMAC can improve the quality and accessibility of information used to assess external technology, but ACAP determines whether that information is converted into learning, recombination, and practical application. This mediating logic integrates the information-processing and absorptive-capacity traditions and offers a more specific recipient-side mechanism than a generic digitalisation effect (Cohen & Levinthal, 1990; Zahra & George, 2002; Flatten et al., 2011; Adomako & Nguyen, 2024).

H4

Absorptive capacity mediates the positive relationship between digital management accounting capability and technology transfer intensity.

2.6 The moderating role of financial slack

There is still going to be constraints when using externally acquired knowledge if firms do not have adequate financial resources. Many activities involved with the use and development of technology can require extra spend that can be classified as discretionary. For example, experimenting, buying licences and technology, employing staff with specific expertise and providing training may all need financial resources that managers can use without affecting current business activities. Financial slack will allow managers to utilise their resources to help with these tasks (Tan & Peng, 2003; Atuahene-Gima et al., 2005; Voss et al., 2008). Financial slack will be important when considering SMEs because many technology initiatives may need capital that could be used for working-capital purposes or day to day business. With the rise of digital technologies there has been some literature showing how access to resources allows SMEs to take advantage of digital (Zainuddin et al., 2026b; Salem et al., 2026).

So, using a contingency theory view we would expect financial slack to help convert ACAP into the ability to use external knowledge through technology transfer. There is much research on slack that shows how

having resources available can help firms with experimentation, searching and developing strategies. But if firms have too much slack or fail to allocate slack correctly it can lead to reduced performance (Tan & Peng, 2003; Atuahene-Gima et al., 2005; Voss et al., 2008). Therefore, we would expect firms with higher financial slack to convert ACAP into more technology transfer than firms with less financial slack. Adomako and Nguyen (2024) list resources and slack as key areas to extend when researching technology transfer. Accordingly, if a firm has low financial slack they may know about and absorb useful technology knowledge but may not have the resources to act on that knowledge. If a firm has high financial slack, they should be able to take the knowledge they have learned and develop it further and apply it to their business.

As mentioned before, we are looking at how slack helps convert knowledge so we would expect it to play a bigger role when a company needs to act on knowledge. Having high ACAP may only allow companies to identify useful external knowledge and absorb it into their organisation. They will need financial slack to allow them to spend money on further developing that technology, commercialising it or hiring staff with that knowledge. We expect that when using external knowledge through technology transfer that if a firm has high financial slack, they will utilise that knowledge more than firms with lower financial slack.

H5

Financial slack positively moderates the relationship between absorptive capacity and technology transfer intensity, such that the relationship is stronger when financial slack is higher.

3 Method

3.1 Research setting and sample

The study focused on technology-engaged SMEs operating in Malaysia. The firm was the unit of analysis. Firms were required to have been in operation for at least 2 years, qualify as SME's according to defined standards. Have participated in some form of technology, innovation, digitalisation or product/process development or R&D over the past 3 years and have had contact with an external technology/knowledge source i.e. University, public research institutes, technology transfer organisation, government technology body, private sector technology providers and industry partners.

Purposive sampling was used to recruit firms from various technology/innovation related SME associations, business directories and contacts. Senior management that are aware of management accounting information, money available, technology related activity and decisions were selected for wave 1. There was a diverse sample of industries that made up the 381 matched firms. Manufacturing (19.7%), Professional/business service (16.3%), Information and communication technology (13.6%), Engineering/Technical service (13.1%), Green/environmental technology (8.9%), Electrical/electronic (8.7%), Food/Agri-tech (8.7%), Other services (7.6%), Biotechnology/Health technology (3.1%) and others (0.3%). Firms had an average of 36.9 full-time employees (median = 28).

There were 400 valid responses obtained from wave 1. Around 6 months later a second shorter survey was sent out to senior management that knew about their firm's technology, innovation/R&D, day to day business and/or had knowledge of external technology relationships. 381 valid wave 2 responses were able to be matched to wave 1 using a unique anonymous code giving us a response rate of 95.25%. Innovation manager, business development manager, R&D manager, general manager, operation manager, technology manager, CEO/managing director and other senior management answered the wave 2 survey. Each of these respondents stated that they know about their firm's external technology, research, innovation or knowledge transfer activities.

Table 1
Sample characteristics

Characteristic	n	%
Matched firms	381	100.0
Manufacturing	75	19.7
Professional/business services	62	16.3
ICT	52	13.6
Engineering/technical services	50	13.1
Green/environmental technology	34	8.9
Electrical/electronics	33	8.7
Food/agri-technology	33	8.7
Other services	29	7.6
Biotechnology/health technology	12	3.1
Other	1	0.3
Formal R&D/innovation function	176	46.2
Received technology/innovation grant	109	28.6
University/public research collaboration	164	43.0

3.2 Research design and data collection

The study used a two-wave design to separate the focal predictors and outcome temporally and to reduce dependence on a single measurement occasion. Wave 1 measured DMAC, ACAP, financial slack, technological turbulence, technological capability, and firm characteristics. Wave 2 measured technology transfer intensity and supplementary technology-transfer indicators. Each firm was assigned an anonymous research code that enabled matching without including the firm name in the analytical dataset.

Procedural remedies for common method variance included temporal separation, separation of predictor and outcome measures across survey waves, different response anchors for selected constructs, confidentiality assurances, neutral wording, and the use of senior informants selected for construct-relevant knowledge. The second wave was designed to be answered by a technology-, innovation-, operations-, R&D-, or business-development-oriented senior respondent where feasible.

3.3 Measures

3.3.1 Digital management accounting capability

DMAC was operationalised by adapting the established management accounting information characteristics of broad scope, timeliness, aggregation, and integration associated with Chenhall and Morris (1986). The referent was explicitly contextualised to digitally supported accounting and management information systems. Each dimension was measured using four items on a seven-point agreement scale. DMAC was modelled as a second-order construct reflected by the four first-order dimensions.

3.3.2 Absorptive capacity

ACAP was measured by adapting the multidimensional scale developed and validated by Flatten et al. (2011). Acquisition was represented by three items, assimilation by four, transformation by four, and exploitation by three. Responses used a seven-point agreement scale. ACAP was modelled as a second-order construct reflected by the four first-order dimensions.

3.3.3 Financial slack

Financial slack was measured using four items adapted from the financial-resource-slack measure associated with Atuahene-Gima et al. (2005). The items captured uncommitted resources, short-run financial availability, rapid access to additional resources, and managerial discretion over financial resources. Responses used a seven-point agreement scale.

3.3.4 Technology transfer intensity

Technology transfer intensity was measured in Wave 2 using five items adapted from Gopalakrishnan and Santoro (2004) and consistent with subsequent JTT applications (Adomako & Nguyen, 2024). Respondents identified their most significant external technology-related partner during the preceding three years and evaluated the intensity of personnel interaction, joint research or technical development, exchange of technical expertise, use of research/technical services, and joint development, adaptation, licensing, application, or commercialisation. Responses ranged from 1 (none/very low intensity) to 7 (extremely high intensity).

3.3.5 Controls

Control variables included firms age, size and technological turbulence. Size was measured by the natural log of number of full-time employees. Technological turbulence was measured by 4 items similar

to Lee and Tang (2018). We measured technological capability with 5 comparative items based on Zhou and Wu (2010). Due to high correlation with both DMAC and ACAP we tested this variable in an alternate specification as a robustness check. Whether or not the firm had a formal R&D/innovation function, received grants and collaborated with universities/public researchers in the past were left as sample description rather than included as control variables in our final model.

3.4 Expert validation and instrument quality

Before administration in the field we had 7 PhDs evaluate each of the 48 core and control items for relevance, ease of understanding, representation and fit within the context on a 4-point scale. Every item scored an I-CVI of 1.00 and an average S-CVI of 1.00. All experts indicated the tool should be used with no modifications. The survey was then soft launched to ensure proper functionality of questions and collection of data. No changes were made to any items prior to Wave 1 administration.

3.5 Common-method assessment, measurement model, and formal model specification

There were four steps taken to complete this analysis. We checked our data for any missing values, duplicate companies, response patterns and attrition. We ended up with a total of 381 matched firms that we used for our analysis. We then evaluated the reliability of our measures using confirmatory factor analysis (CFA). DMAC and ACAP were treated as higher order constructs, and we kept the original constructs that each were composed of. We used Cronbach's alpha and CR to assess reliability, AVE to assess convergent validity and Fornell-Larcker and HTMT to assess discriminant validity.

Common method bias was also tested. Our study design helped alleviate common method bias by having wave 1 and wave 2 separated by time. We had our dependent variable measured at wave 2 and asked for a different senior level informant when possible. We compared 3 models to see if there was evidence of common method bias. The 1 factor common method model, our 12 factor model consisting of all traits and a common method and trait model. In this model we created a common method factor that loaded onto all 48 items and kept our trait factors. These findings are used as evidence that our model does not have common method bias issues but should not be used as a guarantee.

Finally, we ran our measurement model and structural equation model in IBM SPSS Amos 29 after our data was cleaned and reliability was determined using IBM SPSS Statistics 29. As stated earlier, DMAC and ACAP were treated as higher order constructs. Our main structural model included DMAC predicting ACAP, DMAC predicting TTI and ACAP predicting TTI. Firm age, log firm size and technological turbulence were also controlled for. Bootstrapping was used with 10,000 samples to determine if there was an indirect relationship. We were unable to run a observed graphing procedure in AMOS Graphics so we decided to run H5 in SPSS using our composite variable scores for ACAP and Financial slack. We used these mean centred variables to create our interaction term. We ran a separate model with technological capability as a sensitivity control. We chose to run our main hypothesis' (H1-H4) in SEM and run H5 in SPSS to better analyse the relationship between financial slack and ACAP.

The higher-order measurement structure and the structural relationships can be expressed formally as follows, where i indexes firms, C_i denotes the vector of control variables, and the λ terms denote standardised higher-order loadings:

$$DMAC_i = \lambda_{BS} BS_i + \lambda_{TM} TM_i + \lambda_{AG} AG_i + \lambda_{IN} IN_i + \zeta_{DMAC,i} \quad (1)$$

$$ACAP_i = \lambda_{ACQ} ACQ_i + \lambda_{ASM} ASM_i + \lambda_{TRF} TRF_i + \lambda_{EXP} EXP_i + \zeta_{ACAP,i} \quad (2)$$

$$ACAP_i = \alpha_0 + \alpha_1 DMAC_i + \gamma' C_i + \varepsilon_{1i} \quad (3)$$

$$TTI_i = \beta_0 + \beta_1 DMAC_i + \beta_2 ACAP_i + \beta_3 FS_i + \delta' C_i + \varepsilon_{2i} \quad (4)$$

$$TTI_i = \theta_0 + \theta_1 DMAC_i + \theta_2 ACAP_i + \theta_3 FS_i + \theta_4 (ACAP_i \times FS_i) + \kappa' C_i + \varepsilon_{3i} \quad (5)$$

$$\text{Indirect effect} = \alpha_1 \times \beta_2 \quad (6)$$

Equation (3) was used to test H1. Eq. (4) is the latent structure paths used to test H2-H4. Eq. (5) is the specification of the moderation using centred composite scores in a hierarchical regression. Eq. (6) states the mediated effect. Results for the latent SEM, bootstrapped mediation, composite moderation and sensitivity analysis on technological capability are reported individually to allow clarity on how each result is derived from.

4 Structural model estimation and results

4.1 Common-method and measurement-model diagnostics

The two-wave design and temporal separation of the focal predictor and outcome reduced dependence on a single measurement occasion. The method-only one-factor CFA fitted the data poorly, $\chi^2(1080) = 3181.892$, $\chi^2/df = 2.946$, CFI = .695, TLI = .682, RMSEA = .072, and RMR = .104. By contrast, the 12-factor trait-only CFA showed excellent fit, $\chi^2(1014) = 1101.566$, $\chi^2/df = 1.086$, CFI = .987, TLI = .986, RMSEA = .015, and RMR = .041. The method-and-trait model fitted slightly better still, $\chi^2(966) = 1016.176$, $\chi^2/df = 1.052$, CFI = .993, TLI = .992, RMSEA = .012, and RMR = .035. Relative to the trait-only model, the improvement was statistically significant ($\Delta\chi^2 = 85.390$, $\Delta df = 48$, $p < .001$), although the incremental changes in global fit indices were modest. Thus, common method variance may be present but does not dominate the substantive covariance structure.

The higher-order model, in which broad scope, timeliness, aggregation, and integration loaded on DMAC and acquisition, assimilation, transformation, and exploitation loaded on ACAP, also fitted the data well. The final constrained higher-order CFA produced $\chi^2(1060) = 1154.927$, $\chi^2/df = 1.090$, CFI = .986, TLI = .985, RMSEA = .015, RMR = .043, GFI = .892, and AGFI = .880. The constrained solution did not

significantly deteriorate fit relative to the unconstrained higher-order model ($\Delta\chi^2 = 1.995$, $\Delta df = 3$, $p = .574$). The theoretically specified higher-order structure was therefore retained for the structural analysis.

Table 2
Common-method model comparison (N = 381)

Model	χ^2	df	χ^2/df	RMR	RMSEA	TLI	CFI
Method-only / one-factor	3181.892	1080	2.946	.104	.072	.682	.695
Trait-only / 12-factor CFA	1101.566	1014	1.086	.041	.015	.986	.987
Method-and-trait	1016.176	966	1.052	.035	.012	.992	.993

All of the first order standardised factor loadings were above .50. Loadings range as well as Cronbach's alpha, composite reliability and average variance extracted can be seen in Table 3. All three met the standards for CR and AVE when it comes to financial slack, technological turbulence and TTI. Some of the first order dimensions for DMAC and ACAP fell below .50 for AVE but most were reliable.

Technological capability had a CR of .717 and AVE of .337. We chose not to remove any items and have stated these values. As you can see from our higher order construct of DMAC and ACAP they are highly reliable and meet standards of convergent validity. None of the HTMT scores were greater than .90. The largest being between ACAP and technological capability at .878.

Table 3
Construct-level measurement properties

Construct	Std. loading range	α	CR	AVE
Broad scope (BS)	.617–.660	.733	.733	.407
Timeliness (TM)	.598–.640	.719	.719	.390
Aggregation (AG)	.640–.686	.756	.756	.437
Integration (IN)	.624–.675	.743	.743	.419
Acquisition (ACQ)	.551–.594	.597	.595	.329
Assimilation (ASM)	.599–.636	.705	.707	.377
Transformation (TRF)	.546–.644	.688	.688	.356
Exploitation (EXP)	.627–.667	.676	.676	.410
Financial slack (FS)	.742–.802	.853	.853	.592
Technological turbulence (TTUR)	.702–.772	.833	.833	.554
Technological capability (TC)	.508–.639	.717	.717	.337
Technology transfer intensity (TTI)	.639–.821	.862	.862	.558
Notes: Loading ranges are standardised first-order loadings. Higher-order DMAC: CR = .993, AVE = .971; higher-order ACAP: CR = .991, AVE = .965. Dimension-level AVE below .50 is reported transparently; TC is retained only for sensitivity analysis because of discriminant-validity concerns.				

4.2 Descriptive statistics and inter-construct correlations

As shown in Table 4 we can see descriptive statistics and zero order correlations. There is a positive correlation between DMAC and ACAP $r=.675$ and between DMAC and TTI $r=.496$. ACAP and TTI had a positive correlation of $r=.548$. There was a positive correlation between financial slack and TTI $r=.285$. Technological capability was positively correlated with DMAC $r=.668$, ACAP $r=.701$ and TTI $r=.568$. Using the Fornell-Larcker test we found that the square root of the AVE for technological capability was less than its correlation with DMAC and ACAP. Which leads us to believe that technological capability should be used as a sensitivity variable and not a control.

Table 4
Descriptive statistics, correlations, and square roots of AVE (N = 381)

Variable	Mean	SD	1	2	3	4	5	6
1. DMAC	4.796	.680	(.986)					
2. ACAP	4.748	.628	.675***	(.982)				
3. Financial slack	4.356	1.023	.181***	.188***	(.769)			
4. Technological turbulence	4.740	1.009	.056	.071	-.008	(.744)		
5. Technological capability	4.781	.628	.668***	.701***	.136**	.040	(.580)	
6. TTI	4.912	.846	.496***	.548***	.285***	.106*	.568***	(.747)
Notes: Diagonal values in parentheses are square roots of AVE. * p < .05; ** p < .01; *** p < .001. The Fornell-Larcker criterion is not fully satisfied for technological capability against DMAC and ACAP; HTMT remains below .90.								

4.3 Structural model estimation and hypothesis tests

The study primary latent structural model controlled for firm age, log firm size, and technological turbulence. The model showed acceptable fit, $\chi^2 = 1259.951$, $df = 1066$, $\chi^2/df = 1.182$, CFI = .972, TLI = .970, RMSEA = .022, RMR = .052, GFI = .883, and AGFI = .870. DMAC positively predicted ACAP ($B = .721$, $\beta = .787$, C.R. = 8.814, $p < .001$), supporting H1. ACAP positively predicted TTI ($B = .467$, $\beta = .391$, C.R. = 4.049, $p < .001$), supporting H2. The direct DMAC→TTI path also remained positive and significant ($B = .326$, $\beta = .297$, C.R. = 3.270, $p = .001$), supporting H3. The model explained 62.4% of the variance in ACAP and 43.9% of the variance in TTI. Other factors such as firm age, firm size, and technological turbulence were not significant in the primary latent model.

Table 5
Structural SEM and hierarchical moderation results

Variable / statistic	Panel A: ACAP latent SEM	Panel A: TTI latent SEM	Panel B: Mod. M1	Panel B: Mod. M2	Panel B: Mod. M3
Firm age	-.013	-.004	.034	.009	.012
Firm size (log)	-.028	.049	.034	.043	.039
Technological turbulence	.031	.074	.109*	.074	.077
DMAC	.787***	.297**	—	—	—
ACAP	—	.391***	—	.509***	.507***
Financial slack	—	—	—	.188***	.184***
ACAP × Financial slack	—	—	—	—	-.056
R ²	.624	.439	.014	.342	.345
ΔR ² vs prior / baseline	.606	.413	.014	.328***	.003
F-change	—	—	1.738	93.366***	1.787
Notes: Panel A reports standardised coefficients from the latent SEM. Panel B reports standardised coefficients from hierarchical regression using centred composite scores. * p < .05; ** p < .01; *** p < .001. The interaction increment in the final moderation model was not significant (p = .182).					

Relative to controls-only specifications ($R^2 = .018$ for ACAP and $.026$ for TTI), the primary structural model substantially increased explained variance. The focal predictors accounted for an additional $.606$ of ACAP variance and $.413$ of TTI variance. These results support H1-H3 and indicate that DMAC contributes to technology transfer both through its relationship with absorptive capacity and through an additional direct pathway.

4.4 Mediation, moderation, and robustness

H4 predicted that ACAP mediates the DMAC-TTI relationship. Using 10,000 bias-corrected bootstrap samples, the unstandardised indirect effect was $.338$ and the standardised indirect effect was $.309$. The 95% bias-corrected confidence intervals excluded zero for both the unstandardised effect $[.188, .531]$ and the standardised effect $[.177, .455]$. Because the direct DMAC→TTI path remained statistically significant after ACAP was included, the evidence indicates partial mediation. H4 is therefore supported.

Table 6
Bootstrap mediation test

Effect	Estimate	95% BC CI low	95% BC CI high	Significant	Interpretation
Indirect effect (unstandardised)	.338	.188	.531	Yes	Mediation supported
Indirect effect (standardised)	.309	.177	.455	Yes	Mediation supported
Direct DMAC → TTI	.301	—	—	Yes	Partial mediation

H5 predicted that financial slack positively moderates the ACAP-TTI relationship. In the hierarchical regression, the controls-only model explained 1.4% of the variance in TTI. Adding ACAP and financial slack increased R^2 to .342 ($\Delta R^2 = .328$, $F\text{-change} = 93.366$, $p < .001$). ACAP ($\beta = .509$, $p < .001$) and financial slack ($\beta = .188$, $p < .001$) both had positive main effects. Adding ACAP $\times$ financial slack increased R^2 only to .345 ($\Delta R^2 = .003$, $F\text{-change} = 1.787$, $p = .182$). The interaction was negative but non-significant ($B = -.071$, $\beta = -.056$, $t = -1.337$, $p = .182$), so H5 is not supported. A supplementary latent sensitivity specification then introduced technological capability. In that model, TC strongly predicted ACAP ($\beta = .875$) and TTI ($\beta = 1.117$), while the focal DMAC and ACAP paths became non-significant. Because the standardised TC→TTI coefficient exceeded unity and TC showed substantial latent overlap with DMAC and ACAP, this specification is interpreted as evidence of construct overlap and suppression rather than as the primary model.

Table 7
Sensitivity analysis including technological capability

Path	B	β	C.R.	p	Interpretation
DMAC → ACAP	.014	.016	.120	.905	Not significant
TC → ACAP	.953	.875	5.206	< .001	Strong positive
DMAC → TTI	-.236	-.219	-1.310	.190	Not significant
ACAP → TTI	-.248	-.207	-.870	.384	Not significant
TC → TTI	1.456	1.117	3.043	.002	Suppression / overlap concern
R^2 ACAP	—	.794	—	—	
R^2 TTI	—	.601	—	—	

Notes: Standardised coefficients are reported alongside unstandardised estimates and critical ratios. The TC→TTI standardised coefficient exceeds unity, consistent with substantial latent overlap/suppression. The specification is therefore treated as a sensitivity analysis rather than the primary structural model.

Table 8
Summary of hypothesis testing

Hypothesis	Proposed relationship	Key result	Decision
H1	DMAC positively influences ACAP	$\beta = .787$, C.R. = 8.814, $p < .001$	Supported
H2	ACAP positively influences TTI	$\beta = .391$, C.R. = 4.049, $p < .001$	Supported
H3	DMAC positively influences TTI	$\beta = .297$, C.R. = 3.270, $p = .001$	Supported
H4	ACAP mediates DMAC $\rightarrow$ TTI	Indirect $\beta = .309$; 95% BC CI [.177, .455]	Supported – partial mediation
H5	FS positively moderates ACAP $\rightarrow$ TTI	$\beta = -.056$, $\Delta R^2 = .003$, $p = .182$	Not supported
Notes: H1–H3 are based on the primary latent SEM; H4 uses 10,000 bias-corrected bootstrap samples; H5 is based on hierarchical regression with centred composite scores.			

5 Discussion and implications

It was found that DMAC affects technology transfer intensity of technology involved SMEs. There are three key findings from this study. DMAC had a high influence on ACAP ($\beta = .787$). Both ACAP ($\beta = .391$) and DMAC ($\beta = .297$) have significant positive effects on TTI when looking at our initial latent model. Finally, our indirect effect is significant ($\beta = .309$, 95% bias corrected bootstrap CI [.177, .455]) meaning that ACAP partially mediates the relationship between DMAC and TTI. We find that financial slack positively affects the moderation model. However, the ACAP by financial slack interaction term is insignificant ($\beta = -.056$, $p = .182$). Our findings suggest that knowledge processing plays a role in the effect DMAC has on technology transfer intensity and that there is another positive relationship between DMAC and technology transfer intensity.

We can conclude that digital management accounting capability will help organisations understand information that they may face when adopting new technology. When technology transfer takes place SME's will be faced with many unknown areas. Whether it be technical knowledge about alternatives or business-related issues. Cost and collaboration between departments will also be faced when technology is being transferred into a company. By having the right scope of information available to managers they can learn about what is happening externally. This backs up the idea that organisations need information processing ability when dealing with uncertainty.

Our second result that ACAP effects technology transfer intensity is similar to previous studies that look at technology transfer and the recipient's abilities. They all show that a firm needs the ability to gain and utilise knowledge from technology relationships. Similar to Adomako and Nguyen (2024) we believe that digitalisation can play a role in technology transfer but through the lens of the recipient firms' capabilities.

The significant direct DMAC-TTI path adds an important qualification to the mediated mechanism. Digital management accounting capability appears to support technology transfer not only by strengthening absorptive capacity but also by improving the visibility of project costs, resource commitments, implementation requirements, performance indicators, and commercial consequences. These information advantages can reduce decision friction and support faster commitment to technology-related opportunities. The result therefore extends prior evidence that digitalisation can facilitate technology transfer (Adomako & Nguyen, 2024) by identifying a specialised internal accounting-information capability that contributes both directly and through knowledge absorption.

Financial slack produces a different empirical pattern. The interaction term is small and non-significant, and its inclusion adds only .003 to R^2 , although the main effect of slack remains positive and statistically significant. This combination is inconsistent with the proposed amplification mechanism but is consistent with an additive resource logic. Financial flexibility appears to help firms fund experimentation, licensing, testing, adaptation, training, implementation, and commercialisation irrespective of whether ACAP is low or high. The result therefore refines the contingency argument: in this sample, knowledge-processing capability and discretionary financial resources operate as parallel enabling conditions rather than as a multiplicative capability-resource combination.

5.1 Theoretical implications

The study contributes to theory in four ways. First, it extends technology-transfer research by introducing digital management accounting capability as an antecedent of recipient-side knowledge processing. Existing work has emphasised digitalisation, collaboration, technological capability, R&D, and absorptive capacity as drivers of transfer and commercialisation (Gopalakrishnan & Santoro, 2004; Cunningham & O'Reilly, 2018; Adomako & Nguyen, 2024; Ferrer-Serrano et al., 2025). The present findings add a more specific internal information capability to this literature: the management-accounting information architecture of the receiving firm. This extension is also consistent with recent accounting-technology research showing that digitally enabled accounting systems increasingly support information integration, managerial decision making, and wider digital transformation (Zainuddin et al., 2025a; Zainuddin et al., 2026a).

Second, our study identifies that there is a partial mediation effect of DMAC on TTI. We did not expect there to be only a direct or mediation effect of DMAC on TTI. Our results showed that there was an indirect relationship between DMAC and TTI via ACAP however the direct effect was still significant. This indicates that when firms use technology that allows them to gain better information about managing the business it helps them process information that allows for routine decision making and help them with immediate decision making regarding allocation of resources. This relates to our theory OIPT with previous literature on how organisations process information through learning and knowledge acquisition (Galbraith, 1974; Tushman & Nadler, 1978; Cohen & Levinthal, 1990; Zahra & George, 2002; Flatten et al., 2011).

Third, this paper builds on previous OIPT literature. Our theory of OIPT has helped us understand why organisations develop more information processing techniques. By using this theory we were able to see that the same information characteristics play a role when transferring technology. This links back to the idea that accounting information characteristics help managers make decisions about technology they receive from outside of the firm. This further develops the argument put forward by Chenhall and Morris (1986) that accounting information can be used by managers to make decisions. It extends the use of these information characteristics to technology transfer. Previous studies have argued that accounting technologies today can help organisations manage large amounts of information (Zainuddin et al., 2025a; Zainuddin et al., 2025b; Zainuddin et al., 2026a).

Fourth, our study adds to the argument that resources can allow for capability building. Both ACAP and Slack were shown to have positive effects on TTI when looking at moderation. However, our finding that slack did not have a significant moderation effect on the relationship between ACAP and TTI goes against this argument. As there are some arguments that would say if you had more resources, you will be able to use your capabilities more effectively. Past research has looked at how having slacker can help with innovation and developing new ideas (Tan & Peng, 2003; Atuahene-Gima et al., 2005; Voss et al., 2008).

When looking at all these findings we can see that by having good technology in place that can help you make better managerial decisions can lead to more successful technology transfer. There is an effect that goes through absorbing new knowledge and another that just improves your ability to make decisions about transferring technology. Once you are able to absorb this knowledge your ability to transfer technology is improved and if you have slack it allows you to implement these changes more easily.

5.2 Practical and policy implications

Therefore, for SME managers this means that digital accounting systems should not just be invested in to improve reporting and control. They can become more useful if they have high scope and long-range information, timely information, correct levels of analysis and integration with other functions that can link into technology scanning, assessment and adoption (Chenhall & Morris, 1986; Galbraith, 1974; Tushman & Nadler, 1978). These results align with studies that have found digital accounting technology can aid decision making and digitisation within SMEs. Ensuring these processes are adopted will allow organisations to better utilise these technologies (Zainuddin et al., 2025a; Zainuddin et al., 2026a). Managers should invest in digital accounting but ensure that their firms have ways of gaining knowledge and disseminating that knowledge within the firm. As well as testing new knowledge and implementing that knowledge.

The results also caution against treating finance as a substitute for organisational capability. Financial flexibility is positively associated with technology transfer intensity, but it does not make the ACAP-TTI relationship stronger. Managers therefore need both the ability to understand and exploit external knowledge and the discretionary resources required to act on technology opportunities. The significant

direct DMAC effect further implies that improving digital accounting information can support technology decisions even beyond its contribution to ACAP.

For policymakers, universities, and technology-transfer organisations, the evidence suggests that grants, access programmes, and partnership formation should be accompanied by recipient-capability development. Technology-transfer scholarship repeatedly shows that institutional access and inter-organisational relationships are important, but recipient-side capability determines whether external knowledge is actually absorbed and applied (Cunningham & O'Reilly, 2018; Gopalakrishnan & Santoro, 2004; Adomako & Nguyen, 2024; Abid et al., 2025). Support programmes can therefore incorporate technology appraisal, cross-functional information use, knowledge-integration routines, and commercialisation planning. This is particularly relevant for SMEs, where digital accounting and financial technologies can improve access to information and finance but may still require complementary managerial capability for effective use (Zainuddin et al., 2026a; Zainuddin et al., 2026b; Salem et al., 2026). Technology-transfer performance may therefore depend not only on the quality of the technology source or the amount of funding provided, but also on the receiving SME's internal capacity to process and use external knowledge.

At the programme-design level, the findings favour integrated interventions over isolated technology or funding support. A grant may solve a short-run financing constraint, and a university partnership may create access to knowledge, but neither intervention necessarily develops the managerial information and learning routines needed to evaluate, internalise, and commercialise that knowledge. Capability-building components such as digital accounting readiness, technology-cost appraisal, cross-functional decision routines, and post-transfer learning support could therefore complement conventional financing and partnership schemes (Cunningham & O'Reilly, 2018; Adomako & Nguyen, 2024; Zainuddin et al., 2026a; Zainuddin et al., 2026b).

6 Limitations and future research

A few caveats should be noted when interpreting the results and areas for further exploration. First, the current sample consists of SMEs who utilise technology in Malaysia. Institutional factors, finance, universities and industry partnerships and availability of technology support will differ in other countries. As such recipient countries may use technology transfer differently (Cunningham & O'Reilly, 2018; Adomako & Nguyen, 2024; Ferrer-Serrano et al., 2025). Future research in other emerging and developed countries would be beneficial to ensure generalisability and understand if the mechanism between DMAC and ACAP differs depending on the environment. As technology and digital finance have shown to be impacted by differences in various Asian countries (Salem et al., 2026; Zainuddin et al., 2026b) this would also be useful to explore in other regions.

Second, while using a two-wave approach allowed us to address some of the concerns of using one time frame data. However, this is still cross sectional in nature. Although procedural remedies can help alleviate common method bias it is not enough to conclude that there is no endogeneity issues when

using perception-based variables (Podsakoff et al., 2003; Adomako & Nguyen, 2024). Using three waves or archival data that has documented technology transfer would allow for more certainty that DMAC impacts ACAP which then allows for successful transfer. Further studies could look at whether DMAC has an impact on ACAP over time and whether these effects have an impact on technology transfer success.

Third, financial Slack was only measured using a perception of having financial slack. There are multiple ways to measure financial slack (Tan & Peng, 2003; Atuahene-Gima et al., 2005; Voss et al., 2008). Using archival data and a combination of measuring absorbed, unabsorbed and potential financial slack could provide a more robust picture of the firm's ability to adopt and exploit new technologies. Future research could also address the moderation effect of financial slack. We were only able to test H5 by taking the means of the items and creating an interaction variable. There are newer versions of structural equation modelling software that can create the interaction at the latent level. This would allow us to include error terms within the interaction variable.

Fourth, the Technology Transfer Intensity was only measured with respect to one external partner that they received technology from. This allows the respondents to focus on one technology partner and can be applied to firms that receive technology from multiple sources. However, this does not account for firms that receive technology from universities, research institutions, vendors and other technology firms (Gopalakrishnan & Santoro, 2004; Cunningham & O'Reilly, 2018; Adomako & Nguyen, 2024). Future studies can measure the amount of technology firms receive from various partners. Or focus on the different types of partners that firms interact with when receiving technology.

Fifth, technological Capability showed good reliability but low AVE and showed higher correlations with DMAC and ACAP. When we created a supplemental model including a latent variable for technological capability, we saw that it had a strong relationship with ACAP and TTI. Our estimates for ACAP→TTI and DMAC→TTI were drastically lower when we included this variable. With the path from Technological Capability to TTI being greater than 1. More research should be done to measure firm's technological capabilities using a more applicable scale ((Fornell & Larcker, 1981; Henseler et al., 2015).

Finally, the non-significant financial-slack interaction suggests that other boundary conditions may better explain when ACAP generates stronger technology transfer. Prior technology-transfer and absorptive-capacity research indicates that collaboration experience, technological turbulence, organisational learning, and complementary capabilities can shape firms' ability to use external knowledge (Zahra & George, 2002; Flatten et al., 2011; Adomako & Nguyen, 2024; Ferrer-Serrano et al., 2025). Candidate moderators therefore include prior university-industry experience, learning climate, managerial technological expertise, intellectual-property capability, network embeddedness, technological uncertainty, and dedicated R&D resources. Future research should compare such moderators directly rather than assuming that resource abundance necessarily amplifies capability effects.

A further limitation concerns the scope of DMAC itself. The construct was intentionally operationalised from the broad-scope, timeliness, aggregation, and integration characteristics associated with Chenhall

and Morris (1986), but digital accounting continues to evolve through cloud systems, artificial intelligence, real-time analytics, automation, and interconnected financial platforms. Recent reviews and conceptual studies show that the technology-implementation literature in accounting is expanding rapidly but remains fragmented across systems, technologies, and organisational contexts (Zainuddin et al., 2025a; Zainuddin et al., 2025b; Zainuddin et al., 2026a). Future research could therefore extend DMAC by testing whether specific digital functionalities add explanatory power beyond the underlying information characteristics used here, while preserving conceptual separation from generic digitalisation and technological capability.

7 Conclusion

Using two-wave matched data from 381 technology-engaged SMEs, this study shows that digital management accounting capability contributes to technology transfer through two complementary pathways. DMAC strengthens the recipient firm's absorptive capacity, and ACAP in turn increases technology transfer intensity. At the same time, the direct DMAC→TTI relationship remains statistically significant, while the bootstrapped indirect effect through ACAP is also significant. The evidence therefore supports partial mediation: digitally enabled management accounting contributes to technology transfer both through organisational knowledge processing and through an additional direct decision-support pathway.

Financial slack is positively associated with technology transfer intensity in the moderation analysis but does not significantly moderate the ACAP-TTI relationship. The findings therefore position information-processing capability, knowledge-processing capability, and financial-resource flexibility as distinct components of the recipient firm's technology-transfer infrastructure. By bringing management accounting information into this explanation, the study extends technology-transfer research beyond technological and relational antecedents and clarifies how internal managerial information capability becomes relevant to external technology use.

Declarations

Author Contribution

S.A.Z. contributed to the conceptualization, methodology, investigation, data curation, formal analysis, visualization, writing of the original draft, review and editing of the manuscript, and project administration. The author approved the final manuscript.

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Data Availability

The data that support the findings of this study are available from the corresponding author upon reasonable request. The data are not publicly available due to confidentiality and privacy considerations associated with the participating firms.

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Figures

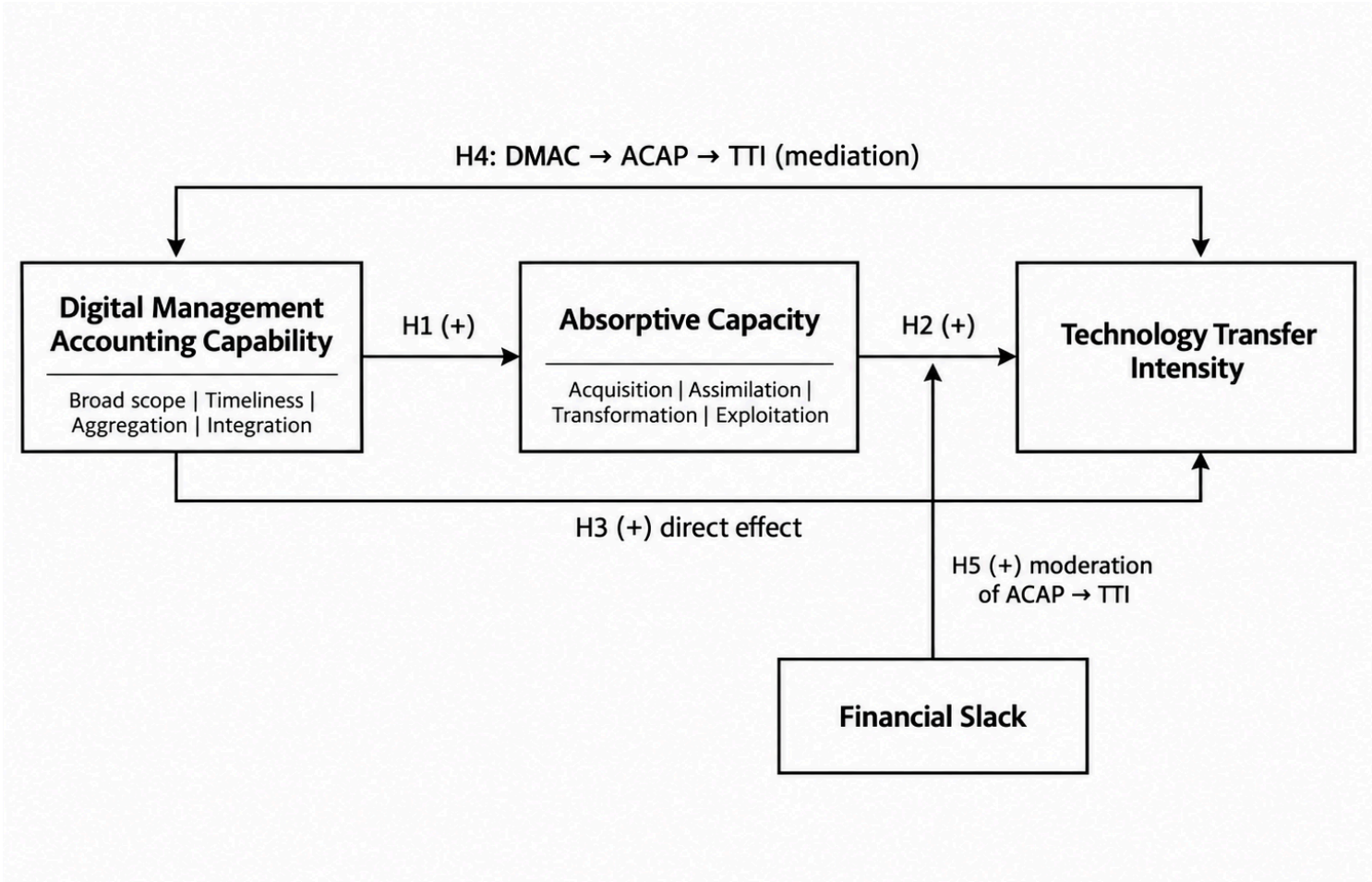
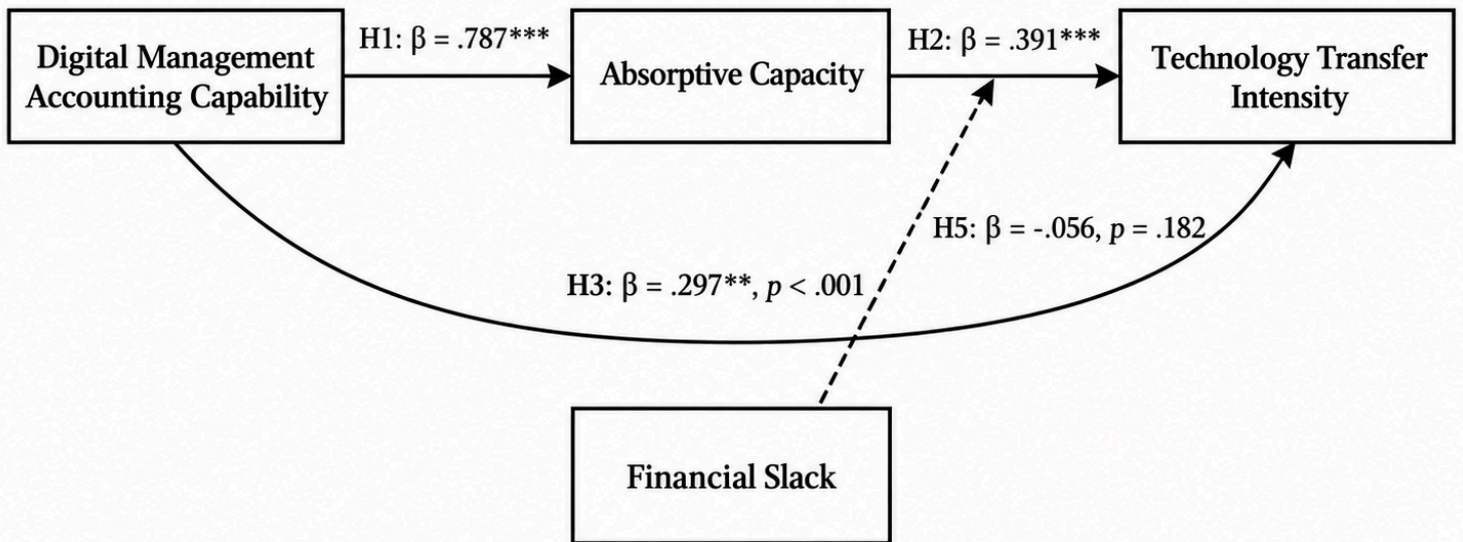


Figure 1

Conceptual framework

H4 indirect effect: $\beta = .309$, 95% BC CI [.177, .455]



*** $p < .001$; ** $p < .01$. Dashed line denotes the hypothesised moderation effect.

Figure 2

Final structural model and estimated focal paths

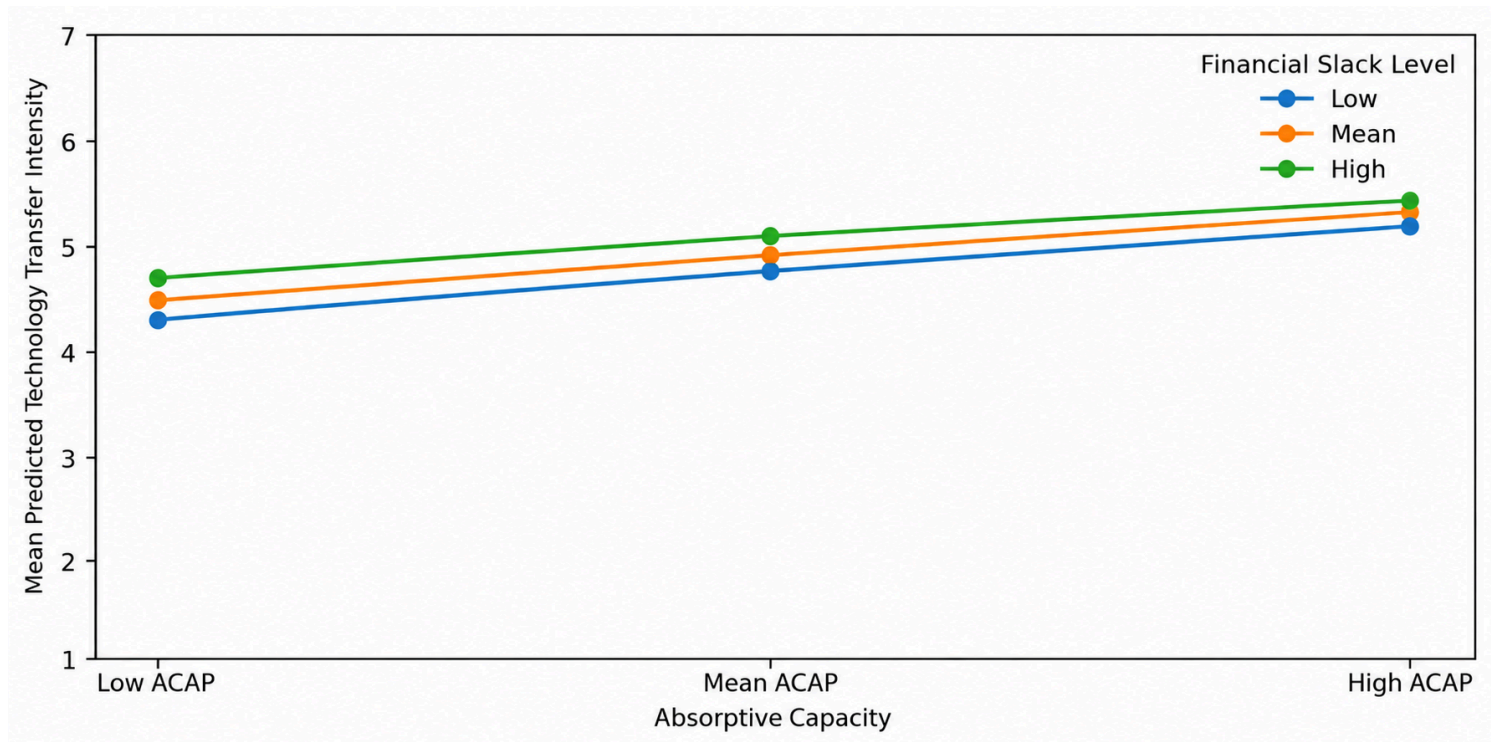


Figure 3

Moderating effect of financial slack on the ACAP–TTI relationship

Supplementary Files

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- [Appendix.docx](#)