

Mergers and acquisitions in emerging markets: What drives absorptive capacity in target firms?



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Purpose: The purpose of this study was to investigate how knowledge flow and productivity affect the absorptive capacity of target firms in emerging markets.

Design/methodology/approach: We used self-administered questionnaires to measure absorptive capacity, knowledge flow and productivity constructs. The sample comprised individuals who were employees of firms that completed acquisitions between 2015 and 2017. The acquisitions were publicly announced and the target firms were all in emerging markets.

Findings/results: Firstly, our results confirmed the multidimensional nature of absorptive capacity. Secondly, we found a positive correlation between a target firm's knowledge flow and productivity and its absorptive capacity. Thirdly, our results indicated that knowledge flow and operational processes will support the introduction and integration of external knowledge into a target firm. Therefore, understanding the absorptive capacity of target firms is central to the ability of new and existing knowledge to be assimilated.

Practical implications: The realisation of the strategic intent of an acquisition is dependent on effective knowledge flow, supported by efficient communication and operational processes. The target firm's absorptive capacity is, therefore, a key consideration for acquiring firms. Understanding this will be useful for firms to consider acquisitions of target firms in emerging markets and could potentially enhance their chances of success.

Originality/value: This study contributes to the limited body of research on emerging market merger and acquisition activity. It responds to the call for further research to be conducted on emerging markets and the role of absorptive capacity in realising the strategic intent of acquisitions.

Keywords: absorptive capacity; knowledge flow; productivity; target firm; emerging markets.

Introduction

Although mergers and acquisitions (M&A) are a common internationalisation strategy, firms' weak absorptive capacity can lead to poor implementation of, or negative performance from M&A perspective – a phenomenon that has long been of interest to management scholars (Ahammad, Tarba, Liu, & Glaister, 2016; Bernad, Fuentelsaz, & Gómez, 2010; Ferreira, Santos, De Almedia, & Reis, 2014).

Absorptive capacity can be defined as a '... capability that [essentially] resides within employees of an organisation ...' (Junni & Sarala, 2013, p. 420), and '... consists of the ability and motivation of the organisational members to access and make use of external knowledge ...' (Junni & Sarala, 2013, p. 421). Many view absorptive capacity as crucial for successful M&A activity because it facilitates the integration of internal knowledge with acquired knowledge, allowing synergies to be identified and leveraged to deliver optimal value (Cohen & Levinthal, 1990; Junni & Sarala, 2013; Nair, Demirbag, & Mellahi, 2016; Wang & Wang, 2015; Zahra & George, 2002). The ability to successfully introduce, integrate and assimilate newly acquired knowledge resources is one of the cornerstones of absorptive capacity.

Despite the scholarly interest, little is known about the role of absorptive capacity in target firms in emerging markets (EMs). Simply generalising attributes that influence EM firms' absorptive capacity from findings in developed economies may be misleading (Khan, Rao-Nicholson, Akhtar, & He, 2017; Xie, Reddy, & Liang, 2017). This questionable approach is exacerbated by the general paucity of managerial skills in EMs such as South Africa (Department of Higher Education and Training, 2019; Nienaber, 2007; Radipere & Scheers,

2005). Rezaei-Zadeh and Darwish (2016) indicated that firms must have suitable managerial skills and processes in place so that knowledge can be organised, integrated and assimilated to enhance the firms' absorptive capacity. The absence of managerial skills therefore constitutes a barrier to building a firm's absorptive capacity (Deng & Yang, 2015; Li, Li, & Wang, 2016; Zahra & George, 2002).

Knowledge is a key resource in a target firm during an acquisition. It is a driver of cross-border acquisitions because the development of local knowledge and capabilities by acquiring firms is time-consuming, whereas the acquisition of already existing assets is more efficient (Junni & Sarala, 2013). The value of acquired resources, however, only becomes evident when knowledge is received and embedded in a target firm's operation (Mukherji, Mukherji, Dibrell, & Francis, 2013). To create absorptive capacity, there needs to be knowledge flow (communication, processes and skills) and productivity (implementation of processes and operational processes). Thereafter, practices need to be established to continually review knowledge for relevance and appropriate application (Lane & Lubatkin, 1998; Zahra & George, 2002).

Knowledge flows within and into a target firm stimulate the firm's absorptive capacity, thereby enabling the firm to creatively adapt internal and acquired external knowledge resources to create value (Martín-de Castro, 2015). Sears and Hoetker (2014) asserted that the integration of the target firm's and the acquiring firm's knowledge set is a precursor to value creation. Knowledge flows into a target firm require a 'linkage' or effective processes to be in place (Nair et al., 2016; Najafi-Tavani, Robson, Zaefarian, Andersson, & Yu, 2018). This 'linkage' allows knowledge to flow efficiently within the target firm, thereby creating a larger pool of knowledge that is directed at realising the intended outcome from the acquisition.

Knowledge flow, as the foundation of absorptive capacity, demands effective operational capacity during the acquisition phase (Bernad et al., 2010; Nair et al., 2016). Cummins and Xie (2008) argued that it is preferable to acquire efficiently run target firms that possess competencies in focused areas, as this will allow the immediate application of knowledge for commercial benefit. Schiffbauer, Siedschlag and Ruane (2017) showed that foreign investors set out to acquire the best-performing firms because enhanced productivity in target firms might not be the natural consequence of foreign ownership (Bernad et al., 2010; Cummins & Xie, 2008). Therefore, target firms should already be productive so that absorptive capacity can be efficiently unleashed and value created (Oldford & Otchere, 2016; Stiebale & Vencappa, 2018).

This study explores the influence of two critical factors on a target firm's absorptive capacity in an EM: knowledge flow and productivity. This study contributes to the M&A literature because these two critical influences will determine whether acquisitions ultimately deliver on firms' strategic intent.

Literature review

Emerging market acquirers seek to complement their capabilities and knowledge resources, thereby compensating for their potential EM deficiencies (Stiebale & Vencappa, 2018; Xie et al., 2017; Yao, Yang, Fisher, Ma, & Fang, 2013). Cummins and Xie (2008) discussed the popularity of cross-border acquisitions in the property and insurance sector, where insurance groups pursue acquisitions to enhance revenue. In addition, through the coordination of inventory systems and supply chains, they create synergies that clear the way for acquisitions (Çömez-Dolgan & Tanyeri, 2015). Deng and Yang (2015) emphasised that, in line with the resource-based theory, resources are unique assets used in implementing value-creating strategies. Such assets and synergies enhance performance and profitability in new or existing markets (Ahammad et al., 2016; Bauer, Matzler, & Wolf, 2016; Rahman & Lambkin, 2015; Xie et al., 2017). If these resources are to be effectively leveraged, the firm must have the capabilities to integrate, learn from and reconfigure internal and external resources in environments such as emerging economies (Tece, 2016).

The acquisition of target firms in EM tends to result in weak transfers of knowledge across industries and between foreign and local firms, owing to the presence of limited skills (Sarala, Junni, Cooper, & Tarba, 2016;) and ineffective processes and policies (Khan et al., 2017; Lebedev, Peng, Xie, & Stevens, 2015; Nair et al., 2016; Osabutey, Williams, & Debrah, 2014). Nevertheless, globalisation and privatisation have sparked a wave of acquisitions of EM firms (Xie et al., 2017). Emerging markets are becoming increasingly important targets for trade and foreign direct investment (FDI) because of the opportunities for business growth (Deng & Yang, 2015). Despite this, M&A in EM has attracted less research attention than M&A in developed markets. This suggests that more research is needed on target firms in EMs specifically (Du & Boateng, 2012; Ferreira et al., 2014).

Lin, Peng, Yang and Sun (2009) asserted that institutional weaknesses and a lack of transparency in EM may result in smaller, more volatile and less liquid markets, thus reducing the prospects of M&A being successful (Chen, Hua, & Boateng, 2017; Du & Boateng, 2012). Underdeveloped institutions trigger concerns about currency expropriation, operational risks and general transactional uncertainty, which could impede successful acquisitions (Acemoglu & Johnson, 2005; Estrin & Prevezer, 2011).

The study discussed in this article answers the call of Nair et al. (2016) for a better understanding of firm's characteristics in countries targeted for acquisition. Since cross-border acquisition deals can produce significant gains, as seen in acquisition examples in India (Nicholson & Salaber, 2013), these additional insights will aid the acquisition process in general.

The absorptive capacity of the target firm is a crucial consideration in acquisition decisions (Du & Sim, 2016; Junni & Sarala, 2013). It has three dimensions: the introduction

of external knowledge into the firm; the integration of newly acquired knowledge with existing knowledge and the assimilation of the acquired knowledge for commercial application (Cohen & Levinthal, 1990; Martín-de Castro, 2015; Zahra & George, 2002). Each dimension influences the effective use of knowledge resources.

Acquired knowledge needs to be identified and diffused by and within the target firm. In the process of introducing and integrating knowledge, target firms will assess the relevance of the knowledge in terms of its implications, potential synergies and benefits (Nair et al., 2016; Yahiaoui, Chebbi, & Weber, 2016). This could affect the assimilation of knowledge as the acquired knowledge may impact current processes, the cost of new processes and resource and skills requirements (Bernad et al., 2010; Buckley, Munjal, Enderwick, & Forsans, 2016; Cummins & Xie, 2008).

Martín-de Castro (2015) argued that to assimilate acquired knowledge, the target firm needs to have the capabilities to analyse, process and interpret it so that it can be utilised effectively. Junni and Sarala (2013), in turn, stressed the importance of probing underexplored influences on, and outcomes of, absorptive capacity at the target firm for successful acquisitions. The following factors have been shown to significantly influence a firm's absorptive capacity: cultural fit (Li et al., 2016), existing regulations, geographical (Nicholson & Salaber, 2013) or historical country dynamics (Junni & Sarala, 2013), employee behaviour (Bertrand & Capron, 2015; Oldford & Otchere, 2016; Zahra & George, 2002), communication, staff retention (Bauer et al., 2016; Wang & Wang, 2015), productivity (Ahammad et al., 2016), organisational and integration processes (Yao et al., 2013) and knowledge transfer (Sears & Hoetker, 2014). However, no differentiation has been made between the effects of these factors on the absorptive capacity of acquiring firms and target firms, respectively.

Du and Sim (2016) argued that it is crucial to understand the effects of acquisitions on target and acquiring firms individually. Junni and Sarala (2013) produced empirical evidence that target firms' knowledge-processing systems influence their absorptive capacity but such systems had no effect on the absorptive capacity of the acquiring firm. The same outcome could be seen in research conducted in the financial sector where, despite the acquiring firm and target firms being regarded as the same, different results were achieved (Mukherji et al., 2013; Stahl et al., 2013).

Target firms undergo more extensive restructuring than the acquiring firm and tend to react negatively to acquisitions. This is because target firm employees struggle to retain their identity and may even be less efficient after the acquisition (Du & Sim, 2016). It is imperative for target firms to understand the extent to which they can absorb knowledge through their employees, as this is an acknowledged source of advantage and way of realising an acquisition's strategic intent (Cohen & Levinthal, 1990; Najafi-Tavani et al., 2018;

Volberda, Foss, & Lyles, 2010). Cohen and Levinthal (1990) reported that absorptive capacity depends on the efforts of employees and the firm's ability to effectively utilise their acquired knowledge. Insufficient effort on the part of employees because of a lack of motivation and/or ability, could negatively impact performance and derail an acquisition. (Sears & Hoetker, 2014)

Andersson, Dasí Mudambi and Pederson (2016) illustrated that performance is dependent on the efficient redeployment of complementary resources between the acquiring and target firm. This will allow acquired resources and capabilities to be effectively utilised by both the acquiring and target firm, thus enhancing their absorptive capacity. Teece (2016) proposed the concept of dynamic capabilities theory to address 'the crucial role of capabilities to integrate, learn and reconfigure internal and external resources...'. Dynamic capabilities theory provides for the strategic use of a firm's capabilities to enhance value (Di Stefano, Peteraf, & Verona, 2014). Therefore, while the strategic intent behind an acquisition is an important driver in an acquisition, this must be supported by the capability of converting knowledge resources into productive outcomes. It is suggested that this required capability is the target firm's absorptive capacity.

Absorptive capacity and knowledge flow

Achieving effective knowledge flow largely involves seamlessly transplanting knowledge into a target firm (Hurtado-Ayala & Gonzalez-Campo, 2015; Najafi-Tavani et al., 2018). Absorptive capacity is regarded as a supportive tool in the mobilisation of knowledge flow as it incorporates processes to introduce, integrate and assimilate knowledge into the firm. Khan et al. (2017), Najafi-Tavani et al. (2018) and Nicholson and Salaber (2013) likened absorptive capacity to a moderator between the flow of knowledge and target firms. To achieve such knowledge flow, Junni and Sarala (2013) showed that knowledge-processing systems are needed, supported by intercompany communication and teamwork and effective infrastructure.

Acquiring firms must ensure that there are effective communication channels within target firms because these will provide a necessary pathway for the flow of knowledge (Liu, Gao, Lu, & Lioliou, 2016), and facilitate the integration and assimilation of acquired knowledge (Rezaei-Zadeh & Darwish, 2016). Research has shown that there should also be social interactions between and within the acquiring and target firms, which will create another channel through which knowledge can flow (Liu et al., 2016). Social interactions create cross-functional ties and connectedness, strengthening the trust and familiarity between the firms and their employees.

Trust enables employees to draw on previous experiences and share know-how, thereby facilitating the externalisation of knowledge. Research completed by Rezaei-Zadeh and Darwish (2016) emphasised the importance of the

acquiring and target firms communicating and interacting continually to encourage shared practices and mutually beneficial outcomes.

Familiarity is seen to reduce possible tension that arise between the acquiring and target firms, which hinders the integration process (Khan et al., 2017; Nair et al., 2016). The transmission of acquired knowledge within the firms streamlines knowledge integration and assimilation. Li et al. (2016) provided evidence that effective knowledge transfer and communication stimulate absorptive capacity, which in turn paves the way for the effective integration of the acquiring and target firm. Building on the research by Li et al. (2016), Najafi-Tavani et al. (2018) argued that acquiring firms should devote enough time and resources to promoting knowledge flow into target firms, ensuring that the latter have the capability to absorb such knowledge.

Knowledge acquisition and dissemination are critical enablers of a firm's ability to sense, seize and exploit opportunities (Nieves & Haller, 2014; Wang & Ahmed, 2007). Zahra, Nielsen and Bogner (1999) argued that it is not sufficient to simply gather and share information; it also needs to be integrated and combined to create new opportunities that can be exploited. Nielsen (2006) asserted that the survival of firms is not premised on how knowledge is accumulated, but rather how it is exploited, which includes acquiring new knowledge.

Dynamic capabilities refer not only to how firms leverage their existing resource base, but also to how they identify and exploit new resources (Teece, 2007). Leveraging knowledge can boost firms' competitive advantage (Hamel & Prahalad, 1994; Wang & Ahmed, 2004). International acquisition is a critical element in the process of accessing new resource bases. At the same time, employees in the target firm need to have the appropriate skills to leverage the acquired knowledge when making decisions (Chen et al., 2017; Stiebale & Vencappa, 2018). The literature reports that the skills involved in undertaking joint tasks or projects, as well as collective teaching (employees observing the employees of the other firm) and direct observation (the knowledge embedded in daily routines and interactions with employees) are some of the ways of stimulating knowledge flow (Najafi-Tavani et al., 2018; Sarala et al., 2016).

This study suggests that effective knowledge flow influences the absorptive capacity of an EM target firm because the diffusion of knowledge across the firm stimulates its use for suitable endeavours and outcomes. The target firm is thus able to make decisions based on the consolidated knowledge in circulation, with a view to realising the strategic intent of the acquisition.

Absorptive capacity and productivity

Absorptive capacity can be accomplished through various processes (Rezaei-Zadeh & Darwish, 2016; Teece, 2016). The existing literature assumes absorptive capacity to be an unrealised capability, made visible explicitly through

organisational routines and processes (Kump, Engelmann, Kessler, & Schweiger, 2019). This study views a target firm's organisational routines and processes as a reflection of the firm's productivity because productivity is a measure used to understand how a firm creates value through operational and organisational efficiencies (Bertrand & Capron, 2015).

Effective knowledge transfer to target firms can generate value for those firms provided operational and organisational efficiencies are in place (Stiebale & Vencappa, 2018). Organisational characteristics, such as structures, policies, routines and accumulated knowledge, have been reported to positively influence the building of knowledge within firms (Rezaei-Zadeh & Darwish, 2016; Volberda et al., 2010) and influence firms' absorptive capacity. Moreover, organisational infrastructure and capacity, as well as the configuration of organisational routines and processes, affect the efficiency and effectiveness of knowledge utilisation (Lichtenthaler, 2016). It is not surprising, then, that the literature portrays absorptive capacity as a multidimensional construct (Hurtado-Ayala & Gonzalez-Campo, 2015).

This article argues that productivity is a factor contributing to enhanced absorptive capacity, which supports the acquisition process (Schiffbauer et al., 2017). A firm's operating and implementation processes, it is argued, have a positive influence on absorptive capacity as they form a fundamental, internal framework that supports the introduction, integration and assimilation of knowledge into the firm. Lichtenthaler (2016) cautioned, however, that absorptive capacity can have negative consequences for a firm if the latter lacks the ability to satisfactorily transform the knowledge.

Deng (2010) found that absorptive capacity was an important determinant of Chinese acquiring firms' ability to obtain strategic assets and achieve superior business performance through productive operations and systems. These operations and systems paved the way for new knowledge to be introduced and integrated into the firms. This resonates with the view expressed by Cohen and Levinthal (1990), Agarwal, Milner and Riaño (2014) and Vaara, Sarala, Stahl and Bjorkman (2012) that a target firm's ability to introduce, integrate and assimilate new ideas depends on the extent of its absorptive capacity.

The results of empirical work carried out by Grigorieva and Petrunina (2015) illustrated that a target firm's post-acquisition performance is heavily dependent on its pre-acquisition performance. Essentially, a firm lacking in operational and organisational efficiencies before the acquisition may not improve afterwards. However, Cassiman, Colombo, Garrone and Veugelers (2005) argued that acquisitions improve the potential to introduce new operations in pursuit of greater scope and economies of scale, thereby enhancing productivity. In contrast, Bernad et al. (2010) showed that following an acquisition, productivity improvements can be found in only half of the target firms.

Stiebale and Vencappa (2018) while analysing the effects of domestic and international acquisitions on various outcomes in target firms, observed that acquisitions induce productivity gains through complementary knowledge transfer or the efficient reallocation of resources. However, contradictory research findings point to productivity not necessarily being enhanced following an acquisition (Bernad et al., 2010; Cummins & Xie, 2008). Therefore, this article argues that productivity should not only be considered to be a result of successful acquisitions but also a factor contributing to the enhancement of absorptive capacity, which supports the acquisition process (Schiffbauer et al., 2017). The literature shows that this topic has not been investigated in the context of target firms – this despite it having strong business relevance (Miozzo, Desyllas, Lee, & Miles, 2016).

Target firms must have the capability of reorganising resources to ensure efficiency gains. This is done by reallocating production across firms, leveraging economies of scale and economies of scope (Chen et al., 2017; Junni & Sarala, 2013). Target firms that effectively interact with stakeholders see the benefit in terms of higher productivity. Such stakeholders include local suppliers, buyers, competitors, trade associations and the local labour market (Oldford & Otchere, 2016). Target firms need to capture value by ensuring that they can respond to the need to restructure stakeholders or assets and/or redeploy resources (Mukherji et al., 2013; Yahiaoui et al., 2016). Effectively designed operations enhance target firms' productivity (Osabutey et al., 2014).

As such, it is hypothesised that if a target firm has productive operations and processes, its absorptive capacity is enhanced because value is generated through the effective use of acquired resources. We present the following hypotheses:

H1: A target firm with knowledge flow has enhanced absorptive capacity

H2: A target firm's productivity influences its absorptive capacity.

Methodology

The analysis was performed on data collected from 110 respondents in acquisitions published in the Competition Commission of South Africa's database. These data lists are available to the public online, in accordance with governmental regulations.

Emerging markets are characterised by underdeveloped institutional frameworks, which impact complex transactions such as M&A (Lin et al., 2009), and therefore also FDI. The use of M&A as a mode of entry into a market is reflected in FDI (Sabir, Rafique, & Abbas, 2019). The institutional frameworks in these countries reflect government effectiveness, political stability, regulatory quality and the rule of law (Lin et al., 2009; Liou & Rao-Nicholson, 2019; Lundqvist, Liljebloom, Loflund, & Maury, 2019; Xie et al., 2017).

In defining South Africa as an EM, we rely on scoring in these dimensions against the developed-country metrics

of the United States of America (Lin et al., 2009) and a further comparison with the emerging economies of Brazil and India (Deng & Yeng, 2015). We rely in turn on the World Bank's Worldwide Governance indicators from 2018 for the scores, across the various dimensions. Kraay, Kaufmann and Mastruzzi (2010) reported that the scores range from -2.5 to +2.5, with scores in the range -2.5 to 0.0 being 'bad' and those above 0.0 being 'good'.

In comparison with the United States of America, South Africa – similar to India and Brazil – reflects markedly lower scores across all the dimensions (see Table 1).

The population for this study comprised all target firms within emerging economies. Lebedev et al. (2015), Nicholson and Salaber (2013) and Xie et al. (2017) supported the fact that acquisition studies apply the following set criteria: (1) the acquisition must be completed, (2) the acquisition has officially been announced (3) the target firm must be located in an emerging economy and (4) the acquisition must have occurred within a specified time period. The time period selected, 2015–2017, allowed recent acquisitions, currently in their post-acquisition phase, to be analysed (Morgan, 2017).

This study was largely based on research performed by Junni and Salara (2013), whose data set consisted of 123 respondents and measured the relationship between absorptive capacity and knowledge transfer in the acquiring and target firms. The final sample generated 110 completed questionnaires, which is in line with similar studies. As the M&A were at the firm level, the respondents were deemed proxies of the firm (Ferreira et al., 2014).

Measuring instrument

Questionnaires measured respondents' answers on a Likert scale, ranging from 1 ('strongly disagree') to 5 ('strongly agree') (Flatten, Engelen, Zahra, & Brettel, 2011). A questionnaire (see Appendix 1) was prepared in line with the literature to measure absorptive capacity, knowledge flow and productivity (Hurtado-Ayala & Gonzalez-Campo, 2015; Mahnke, Pedersen, & Verzin, 2005; Yang & Rui, 2009). Consolidated data were analysed using IBM® SPSS version 24. Prior to testing the existence and strength of the relationships amongst the constructs, the constructs' reliability and validity were first established.

TABLE 1: Emerging economy indicators of South Africa, Brazil and India in comparison with the United States of America.

Variable	South Africa	Brazil	India	United States of America
Government effectiveness	0.3	-0.4	0.3	1.6
Political stability	-0.2	-0.4	-1.0	0.5
Regulatory quality	0.1	-0.3	0.0	1.6
Rule of law	-0.1	-0.3	0.0	1.5

Source: Kaufman, D., Kraay, A., & Mastruzzi, M. (2010). The worldwide governance indicators: Methodology and analytical issues (Policy Research Working Paper no. 5430). *The World Bank Development Research Group*. Retrieved from <https://openknowledge.worldbank.org/bitstream/handle/10986/3913/WPS5430.pdf?sequence=1>

Absorptive capacity

Absorptive capacity was measured by asking questions about the introduction of new knowledge into the target firm (Yao et al., 2013), the integration of new and old knowledge and the assimilation of knowledge (Flatten et al., 2011; Zahra & George, 2002). A broad range of functions was used to support the analysis of knowledge flow throughout the organisation as it helped to limit biases between functions and ensure that the organisation was holistically represented (Bernad et al., 2010).

Knowledge flow

Knowledge flow was measured by asking questions about how communication (Junni & Sarala, 2013), processes (Teece, 2016) and skills (Sarala et al., 2016) facilitated knowledge flow into the firm (Hurtado-Ayala & Gonzalez-Campo, 2015).

Productivity

Productivity was measured by asking questions about barriers to organisational structure, barriers to operational effectiveness and barriers to communicating during the integration process and implementing changes in order to enhance value (Oldford & Otchere, 2016; Yang & Rui, 2009).

Descriptive variables

The assessed sample set comprised various industries and firm sizes. As seen in research by Li et al. (2016), size, experience and industry specifics are examples of factors influencing acquisitions, and so these variables were included in the study's questionnaire. The questions related to number of subordinates, size of the firm, age of the firm, experience of the firm in dealing with acquisitions and relatedness/involvement in the acquisition.

Ethical considerations

This article followed all ethical standards for research. Ethical clearance for the study was obtained from University of Pretoria's Gordon Institute of Business Science Research Ethics Committee.

Results

Factor analysis and internal reliability

Absorptive capacity, knowledge flow and productivity contained Kaiser–Meyer–Olkin (KMO) and Bartlett's test values of $p < 0.05$ and $KMO > 0.7$ (Table 2). The overall KMO

sampling adequacy was middling at 0.760, with 0.775 and 0.802 for absorptive capacity, knowledge flow and productivity, accordingly. With significant scores in the Bartlett's tests for sphericity at $p = 0.00$, this indicated that the data were factorisable and were therefore deemed suitable for principal component analysis (PCA).

The Exploratory Factor Analysis (EFA) analysis showed eigenvalues > 1 for all constructs tested with percentage extractions $> 63\%$. To reflect further on the results, the Cronbach's alpha of absorptive capacity indicated reliability ($\alpha = 0.804$) of the questions used to test for the construct. We found that the absorptive capacity of the target firm consisted of three variables that were deemed underlying factors. The factors were classified in accordance with the focus of the questions: introduction of knowledge, integration of knowledge and assimilation of knowledge, respectively. As seen in Table 3, the total percentage of variance explained by these extracted factors was 63%. Similarly, knowledge flow consisted of three factors: communication, skills required and processes that support knowledge flow.

The total percentage of variance explained by these extracted factors was noted at 70% and therefore the factor was deemed suitable. Lastly, productivity consisted of two factors: implementation of processes and efficient operational processes. The total percentage of variance explained by these extracted factors was also observed at 59%.

Confirmatory factor analysis was used to verify the convergent and discriminant validity of the measurement model. The comparative fit index ($CFI \leq 0.09$) and the incremental fit index (IFI) indicated that the model did not have a good fit. Similarly, the root mean square that was identified ($RMSEA > 0.08$) for all constructs indicated that there was not a good fit (Johnson & Christensen, 2014); however, these results may be because of the sample size (Hair, Black, Babin, & Anderson, 2010; Izquierdo, Olea, & Abad, 2014; Johnson & Christensen, 2014).

A correlation analysis was performed to determine the convergent or bivariate relationship between the variables extracted through the EFA. Strong and positive correlations indicated evidence of convergent validity of the variables. All factors showed convergent validity and therefore could be considered statistically significant for moderate relationships existing between the constructs (see Table 4).

TABLE 2: Internal reliability and factor analysis results.

Scale	Absorptive capacity	Knowledge flow	Productivity
Sample size	110	110	110
Number of items	10	10	10
Cronbach's alpha	0.80	0.84	0.87
KMO measure of sampling adequacy	0.76	0.78	0.80
Bartlett's test of sphericity p	0.00	0.00	0.00
Percentage of variance extracted	63.34	70.32	70.89
Number of factors extracted (eigenvalue ≥ 1)	3	3	3

TABLE 3: Percentage extraction of subfactors.

Variable	Category	Extraction (%)
Absorptive capacity	Introduction of knowledge	37.5
	Integration of knowledge	52.3
	Assimilation of knowledge	63.3
Knowledge flow	Communication	40.9
	Processes	57.7
	Skill	70.3
Productivity	Implementation of processes	46.0
	Operational processes	59.8

TABLE 4: Descriptive statistics for constructs and correlation.

Variable	Mean	SD	Introduction of knowledge		Integration of knowledge		Assimilation of knowledge		Communication during KT	Processes of KT	Skills for KT processes	Implementation of processes	Operational processes
			<i>r</i>	<i>p</i> -value	<i>r</i>	<i>p</i> -value	<i>r</i>	<i>p</i> -value					
Introduction of knowledge	3.72	0.74	1.00	-	-	-	-	-	-	-	-	-	-
Integration of knowledge	3.59	0.73	0.42	-	1.00	-	-	-	-	-	-	-	-
Assimilation of knowledge	3.81	0.77	0.46	-	0.29	-	1.00	-	-	-	-	-	-
Communication during KT	3.37	0.97	0.26	0.03	0.56	0.00	0.25	0.00	1.00	-	-	-	-
Processes for KT	3.32	0.96	0.00	0.50	0.54	0.00	0.26	0.00	0.53	1.00	-	-	-
Skills for KT	3.12	0.82	0.27	0.00	0.32	0.00	0.30	0.00	0.26	0.46	1.00	-	-
Implementation of processes	3.39	0.85	0.56	0.00	0.18	0.03	0.22	0.01	0.06	0.13	0.61	1.00	-
Operational processes	3.41	0.77	0.48	0.00	0.60	0.00	0.37	0.00	0.45	0.66	0.50	0.55	1.00

SD, standard deviation; KT, knowledge transfer.

TABLE 5: Linear regression data.

Variable	Introduction of knowledge		Integration of knowledge		Assimilation of knowledge	
	β	R^2	β	R^2	β	R^2
Communication during KT	0.26	0.067*	0.56	0.314*	0.25	0.63*
Processes for KT	0.00	0.000*	0.54	0.290*	0.26	0.70*
Skills for KT	0.27	0.074*	0.10	0.100*	0.30	0.09*
Implementation of processes	0.56	0.310*	0.18	0.030*	0.22	0.05*
Operational processes	0.48	0.230*	0.60	0.360*	0.37	0.13*

*, $R^2 = \Delta R$.

KT, knowledge transfer.

Correlations between constructs

Introduction of knowledge showed a positive acceptable correlation in relation to communication required for knowledge flow ($\rho = 0.26$; $p < 0.05$) and skills required for knowledge flow ($\rho = 0.27$; $p < 0.05$). Processes for knowledge flow ($\rho = 0.00$; $p > 0.05$) showed a $p > 0.05$, indicating non-significance of this data point. Integration of knowledge also showed a positive relation to communication of knowledge transfers ($\rho = 0.56$; $p < 0.05$), processes for knowledge transfers ($\rho = 0.54$; $p < 0.05$) and skills involved in knowledge transfers ($\rho = 0.36$; $p < 0.05$). These strong correlation values showed equally significant, positive, linear regression values. This indicates the importance of knowledge integration into the target firm. Integration of knowledge transferred requires knowledge to have effective communication, processes and skills, as shown in the linear correlation seen in the data obtained from respondents. Assimilation of knowledge was positively related to communication during knowledge transfer ($\rho = 0.25$; $p < 0.05$), processes for knowledge transfer ($\rho = 0.26$; $p < 0.05$) and skills required in knowledge transfer ($\rho = 0.30$; $p < 0.05$).

Therefore, Hypothesis 1 was supported ($\rho = 0.27$; $p < 0.05$), showing that target firms possessing a good flow of knowledge via effective communication, processes and skills will enhance the targets firms' absorptive capacity.

All regression values (Table 5) were positive, therefore indicating a linear positive relationship between absorptive capacity and knowledge flow. The strongest and most significant relationship was between processes involved in knowledge flow and assimilation of knowledge. This

relationship indicated that a change in processes of knowledge flow will explain 70% of the change in the assimilation of acquired knowledge.

In relation to Hypothesis 2, prior studies investigated the productivity of firms following an acquisition. However, this research observed the variable in terms of the relationship with absorptive capacity, with a specific focus on the target firm (Oldford & Otchere, 2016). Strong positive correlations were found for each of the research constructs. The introduction of knowledge and implementation of processes ($\rho = 0.56$; $p < 0.05$) and operational processes ($\rho = 0.48$; $p < 0.05$) showed a strong correlation, pointing to a relationship between these variables. Integration of knowledge showed a moderate relationship with implementation of processes ($\rho = 0.18$; $p < 0.05$), with a strong correlation to operational processes ($\rho = 0.60$; $p < 0.00$). Assimilation of knowledge consisted of positive moderate correlations with implementation of processes ($\rho = 0.22$; $p < 0.05$) and a similarly moderate correlation with operational processes ($\rho = 0.37$; $p < 0.05$). Higher correlations were expected for the relationship between assimilation of knowledge and operational processes, as research shows evidence of a strong correlation and dependence between these variables (Teece, 2016).

The overall correlation between the absorptive capacity variables and the productivity variables were moderate but significant, indicating that productivity is not only related to the behaviour of a firm after an acquisition but also influences absorptive capacity during an acquisition. The R^2 values were noticed as > 0.05 ; therefore, the positive linear regression was a good fit. The most significant relationship was that

between processes involved in effective operational processes and integration of knowledge. This relationship showed that a change in effective operational processes can explain 36% of the change in the integration of knowledge.

Conclusion

These results contribute to the M&A literature on absorptive capacity by presenting key findings on the absorptive capacity of target firms in EM. In particular, this study illustrates the importance of knowledge flow and productivity on a target firm's absorptive capacity to extract the required value from acquired knowledge and to effectively implement it. This finding is supported by research performed by Du and Sim (2016) who showed that specific characteristics relating to the target firm influence acquisition performance.

This study provides a new perspective on target firms as the findings relate to a population sample consisting of EM target firms (Du & Sim, 2016; Grigorieva & Petrunina, 2015). The literature has revealed a need to understand the absorptive capacity in EM target firms because of an over-concentration of DM literature on the subject, which overlooks the influence of absorptive capacity in target firms in acquisition cases (Grigorieva & Petrunina, 2015; Junni & Sarala, 2013; Nair et al., 2016). As EM target firms tend to face contextual challenges, they must have an effective absorptive capacity for knowledge because the utilisation of acquired resources supports performance.

Within the EM context, the aim of this study was to determine the influence of knowledge flow and productivity on the enhancement of absorptive capacity in target firms. Our findings illustrate that knowledge flow and productivity within target firms have positive correlations with the firms' absorptive capacity. This indicates that the successful movement of knowledge within the firm together with conducive operational processes will support the introduction and integration of external knowledge into the target firms and the assimilation of this knowledge. This, in turn, supports the aim of realising the strategic intent of the acquisition (Du & Boateng, 2012).

These findings show a link between operational knowledge flow, via effective communication and processes and focused dimensions of absorptive capacity – specifically integration and assimilation of knowledge. Studies have largely failed to analyse absorptive capacity as a multilayered construct, choosing instead to see it as a one-dimensional construct (Hurtado-Ayala & Gonzalez-Campo, 2015). The introduction of knowledge into the target firm, the integration of new and old knowledge and the assimilation of this knowledge have varying influences on each dimension. This study empirically shows that this aspect must be taken into consideration when analysing a target firm's absorptive capacity. This is because knowledge flow specifically influences the integration and assimilation of knowledge resources, while productivity within a target firm influences the introduction and integration of knowledge.

Our results indicate that knowledge flow within EM target firms positively influences a firm's absorptive capacity. Our results are in line with research by Mahnke et al. (2005) who showed empirically that absorptive capacity has a strong, positive impact on the flow of knowledge within a firm, resulting in a strong, positive impact on business performance. This is a significant finding that points to the need for EM target firms, which are seeking to leverage their absorptive capacity to positively impact M&A, to ensure that there is a good flow of knowledge both to the firm and within the firm (Martín-de Castro, 2015).

Communication of knowledge into the firm and processes by which the knowledge is encouraged to flow showed a stronger influence on absorptive capacity integration and assimilation of knowledge. This indicates that firms must ensure that newly acquired knowledge is communicated into the firm and that employees are allowed to absorb the knowledge with a view to strengthening business performance. Communication of newly acquired knowledge will also lead not only through sharing of the knowledge, to the development of social ties and connectedness between the employees but also between the acquiring and target firm. This strengthens the acquiring-target relationship (Junni & Sarala, 2013).

The study's results also highlight the significance of a knowledge-processing system in the target firm, based on extensive communication and teamwork. This supports acquisition research which holds that communication during integration processes influences absorptive capacity (Junni & Sarala, 2013). It is pertinent for firms to supplement the seamless integration of resources with processes that facilitate the flow of knowledge (Khan et al., 2017; Yang & Rui, 2009). This emphasises the importance of management actions to ensure that the target firm can effectively communicate the new knowledge internally. Managers must ensure that the required processes are present in the target firm to support the integration of new and old knowledge. This allows a firm to consolidate and review the relevance of the knowledge available. This review allows the target firm to better understand the requirements and implications of the acquired knowledge and where it fits into the overall vision.

Processes supporting knowledge flow within target firms and those promoting the assimilation of knowledge on the basis of absorptive capacity showed a significant relationship, indicating that a change in processes driving knowledge flow explains 70% of the resulting change in the assimilation of knowledge. This has significant business implications as target firms that have adequate processes in place can effectively assimilate their knowledge and in the process improve their knowledge resources to their commercial advantage. Tzokas, Kim, Akbar and Al-Dajani (2015) emphasised that assimilated knowledge drives innovative ideas, which in turn enhance business performance. Research has shown that knowledge flow is seen to be facilitated by managers within a target firm, and it is managers' experience

that defines the processes and plans for integrating and assimilating knowledge into the firm. However, as shown in this study's results, firms must ensure that managers have the requisite skills, and they are supported by the necessary processes, if they are to effectively organise and utilise the knowledge (Rezaei-Zadeh & Darwish, 2016).

The findings highlight the importance of effective absorptive capacity in emerging economies, which are seeking to stimulate growth and development from the new knowledge accompanying the acquisition process. The literature suggests that emerging economies have weak knowledge transfer capabilities. Thus, this study's findings suggest that absorptive capacity can improve the prospects of effective knowledge transfer. Target firms with the absorptive capability to assimilate new knowledge for commercial benefit should capitalise on the full value of resources attained through the acquisition to achieve the desired growth.

Regarding Hypothesis 2, this study confirms that productivity is not necessarily an outcome of an acquisition; it is, in fact, a strong influence on the development of absorptive capacity and the integration of knowledge into the firm. Foreign investors set out to acquire the best-performing firms with productivity advantages as these firms are able to effectively introduce and integrate knowledge, thereby sustaining the performance of the acquisition (Bernad et al., 2010; Cummins & Xie, 2008). This study contributes to the M&A literature by emphasising that the introduction and integration of acquired knowledge into a firm requires the effective implementation of new processes and sound operational processes. This will allow knowledge to smoothly feed into the target firm's internal systems and allows for the integration of internal and external knowledge resources (Najafi-Tavani et al., 2018). As the level of absorptive capacity increases, a target firm will become more capable of learning from its local environment and leveraging local capabilities to integrate knowledge assets. According to these results, target firms with sound implementation processes and well-functioning day-to-day operations are more likely to successfully utilise new knowledge. In contrast to some studies that assert acquiring firms must take charge of ensuring knowledge flow as this will facilitate the transfer of the acquiring firm's best practices, this study illustrates that it is, in fact, also the operational processes within the target firm that will facilitate the introduction of acquired knowledge into the firm.

Another explanation for the relationship between productivity and the introduction and integration of knowledge is that operational processes act as a 'funnel or screening mechanism to productively utilise external knowledge' (Tzokas et al., 2015). This can be attributed to the absorptive capabilities of the target firm to extract value from a firm's resources. This indicates that productivity within the target firm creates a pathway for new knowledge to enter the

firm and for operational processes to integrate the knowledge into the day-to-day operations. Enhancing the prospects of a successful acquisition is evident in the literature, which shows that target firms are acquired specifically for a particular capability or their general performance level as such firms are better placed to manage the knowledge acquisition process flowing from the acquisition.

These results indicate that productivity enhances the absorptive capacity of target firms, thereby facilitating the introduction and integration of acquired knowledge into new processes or products. Acquired knowledge, if well integrated, can be reviewed to look for any synergies with the target firm's current resources, which can be leveraged to create additional value. This study shows that firms with well-constructed implementation processes will have higher absorptive capacity, which can allow knowledge to be internalised more efficiently (Martín-de Castro, 2015).

Finally, the study has highlighted the importance of resources as unique assets that are crucial for implementing value-creating strategies. Ahammad et al. (2016) and Bertrand and Capron (2015) stated that the use of knowledge, skills and resources is a significant feature of absorptive capacity, which is key to the success and sustainability of an acquisition.

The results of this study indicate that to optimise acquired knowledge resources, target firms must ensure that these resources are communicated into the firm, using the correct processes and skills. Knowledge flow will have a positive impact on the firm's absorptive capacity as it will stimulate the integration of the acquired knowledge and ensure that it translates into value. Furthermore, productivity in the firm will rise with the help of efficient implementation and operational processes.

It should be observed that only target firms from Southern Africa were included in the study. Therefore, future research should validate these findings with a larger sample of foreign acquisitions. This will contribute to the M&A literature because some acquisitions will undergo significant changes while others will experience minimal changes, depending on location and strategic intent. Future research could apply a longitudinal method to examine how absorptive capacity and knowledge flow and productivity change over a period of time.

This study was deliberately biased towards the perspective of the target firm. Further research should build on this study and include the perspectives of acquiring firms. This will allow a comparison to be made between the two entities, which will either strengthen or weaken the argument regarding the different factors influencing target firms and acquiring firms, respectively. Lastly, this study was also limited to an analysis of the effects of productivity and knowledge flow on absorptive capacity. Yet there are other variables that can create or destroy absorptive capacity, which deserve research attention.

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S.P., M.D.C., A.V. and M.M. contributed equally to this work.

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Data availability

Raw data of this study are available from the corresponding author, M.D.C., upon reasonable request.

Disclaimer

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Appendix 1

TABLE 1-A1: Questionnaire.

Number	Variable	Likert scale				
		1	2	3	4	5
A Demographics						
A1	Age	≥ 20	20–30	31–40	41–50	51–60
A2	Gender	female	male	Not Relevant	-	-
A3	Management level	none	Junior management	Middle management	Senior management	Executive management
A4	Department	Sales	Marketing	Research and Development	Manufacturing	Human resources
A5	How long have you been with the organisation?	0–5 years	6–10 years	11–15 years	16–20 years	5 ≥ 20 years
B Control questions						
B1	How many subordinates do you have reporting to you?	0–5 people	6–10 people	11–15 People	16–20 people	5 ≥ 20 people
B2	What is the size of the firm	small	Medium	Large		
B3	How old is the firm?	0–5 years	6–10 years	11–15 years	16–20 years	5 ≥ 20 years
B4	What is your experience with dealing with post-acquisition integration?	0–5 years	6–10 years	11–15 years	16–20 years	5 ≥ 20 years
B5	To what extent of your relatedness/involvement in the acquisition	Highly insignificant	Insignificant	Neither significant or insignificant	Significant	Highly significant
C Absorptive capacity						
C1	External knowledge is adopted quickly for use in products/service development.	Strongly disagree	Disagree	Neither Agree or Disagree	Agree	Highly agree
C2	Employees link existing knowledge with no insights when developing new products or processes.	Strongly disagree	Disagree	Neither Agree or Disagree	Agree	Highly agree
C3	We emphasise the systematic reuse of insights from past projects.	Strongly disagree	Disagree	Neither Agree or Disagree	Agree	Highly agree
C4	Our employees transfer new knowledge into valuable information for our company.	Strongly disagree	Disagree	Neither Agree or Disagree	Agree	Highly agree
C5	Employees share new knowledge and make it accessible and available.	Strongly disagree	Disagree	Neither Agree or Disagree	Agree	Highly agree
C6	Learning capabilities are an advantage for our firm.	Strongly disagree	Disagree	Neither Agree or Disagree	Agree	Highly agree
C7	Employees are able to efficiently apply new knowledge into their practical work.	Strongly disagree	Disagree	Neither Agree or Disagree	Agree	Highly agree
C8	'I perfectly understand the knowledge' and 'I can easily acquire new knowledge'.	Strongly disagree	Disagree	Neither Agree or Disagree	Agree	Highly agree
C9	'I find knowledge sharing rewarding' and 'I don't fear they will steal my ideas'.	Strongly disagree	Disagree	Neither Agree or Disagree	Agree	Highly agree
C10	Our employees are used to absorbing new knowledge and to prepare it for further purposes and making it available.	Strongly disagree	Disagree	Neither Agree or Disagree	Agree	Highly agree
D Knowledge transfer						
D1	Ideals and concepts are communicated effectively across departments/teams.	Strongly disagree	Disagree	Neither Agree or Disagree	Agree	Highly agree
D2	Different parts of the company work well together to solve problems.	Strongly disagree	Disagree	Neither Agree or Disagree	Agree	Highly agree
D3	Tools are used to spread knowledge across the whole organisation (e.g. knowledge management systems, intranet, internal studies, best practise guides).	Strongly disagree	Disagree	Neither Agree or Disagree	Agree	Highly agree
D4	Face-to-face, cross departmental/team meetings are used to exchange new developments, discuss problems and/or achievements.	Strongly disagree	Disagree	Neither Agree or Disagree	Agree	Highly agree
D5	Temporary exchanges of personnel between departments/teams are encouraged.	Strongly disagree	Disagree	Neither Agree or Disagree	Agree	Highly agree
D6	Information flows quickly e.g. if a department obtains important information it is communicated to the relevant people.	Strongly disagree	Disagree	Neither Agree or Disagree	Agree	Highly agree
D7	There is informal contact between employees of all levels and departments.	Strongly disagree	Disagree	Neither Agree or Disagree	Agree	Highly agree

Table 1-A1 continues on the next page →

TABLE 1-A1 (Continues...): Questionnaire.

Number	Variable	Likert scale				
		1	2	3	4	5
D8	Employees know who possesses specialist skills and knowledge and for whom certain information is of interest.	Strongly disagree	Disagree	Neither Agree or Disagree	Agree	Highly agree
D9	Employees are willing to share knowledge, information and experience with their colleagues.	Strongly disagree	Disagree	Neither Agree or Disagree	Agree	Highly agree
D10	Employee trainings and continuous learnings are available to employees.	Strongly disagree	Disagree	Neither Agree or Disagree	Agree	Highly agree
E	Productivity					
E1	Efficient resource allocation system are established	Strongly disagree	Disagree	Neither agree or disagree	Agree	Highly agree
E2	Procedures for building common tools, practices and processes are established	Strongly disagree	Disagree	Neither agree or disagree	Agree	Highly agree
E3	Establish appropriate internal mechanisms for transferring competencies and assets across the business units	Strongly disagree	Disagree	Neither agree or disagree	Agree	Highly agree
E4	Integration of information systems infrastructure between merging firms	Strongly disagree	Disagree	Neither agree or disagree	Agree	Highly agree
E5	Utilise synergistic attributes of the acquired company with reference to the acquiring company	Strongly disagree	Disagree	Neither agree or disagree	Agree	Highly agree
E6	Capture scale economies to save costs through combining two firms within an industry	Strongly disagree	Disagree	Neither agree or disagree	Agree	Highly agree
E7	A periodical meeting with experts within our firm for the accumulation of relevant information occurs	Strongly disagree	Disagree	Neither agree or disagree	Agree	Highly agree
E8	In our company ideas and concepts are communicated across all departments.	Strongly disagree	Disagree	Neither agree or disagree	Agree	Highly agree
E9	Our company uses tools (e.g. intranet, internal studies/reports) to spread knowledge in the whole organisation.	Strongly disagree	Disagree	Neither agree or disagree	Agree	Highly agree
E10	Our employees have the ability to structure and use collected knowledge.	Strongly disagree	Disagree	Neither agree or disagree	Agree	Highly agree

Source: Adapted from: Oldford and Otchere, (2016); Yang and Rui (2009); Flatten, Engelen, Zahra, and Brettel (2011); Zahra and George (2002); Hurtado-Ayala and Gonzalez-Campo (2015); Junni and Sarala (2013); Teece (2016); Sarala et al., (2016); Bernad et al., (2010); Li et al. (2016).

Note: Please see the full reference list of the article, Pillay, S., Chiba, M.D., Verachia, A., & Mthombeni. M. (2021). Mergers and acquisitions in emerging markets: What drives absorptive capacity in target firms? *South African Journal of Business Management*, 52(1), a2039. <https://doi.org/10.4102/sajbm.v52i1.2039>, for more information.