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The Moderating Role of An Innovative Culture in The Relationship Between Absorptive Capacity and Innovative Performance Among

Jordanian Smes
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Abstract

The struggle to successfully survive the global and economic situation in Jordan for Small and Medium-sized Enterprises (SMEs) is due to limited resources. In a very competitive environment, innovative performance is necessary for SMEs to maintain their competitive advantage. Innovative performance results from leveraging the opportunities for creativity, building of values via resources and capabilities and the combination of effective internal and external knowledge structures. In Jordan, however, the Innovative Performance (IP) of manufacturing SMEs has not been adequately explored. Thus, the impact of absorptive capacity on the Innovative Performance (IP) of manufacturing SMEs in Jordan was investigated in this study, with a focus on the two major dimensions of Absorptive Capacity (AC), which are Potential Absorptive Capacity (PAC) and Realised Absorptive Capacity (RAC). The moderating role of Innovative Culture (IC) and the effect of both absorptive capacity dimensions on innovative performance were also examined. Data was obtained using a structured questionnaire involving owners and managers of SMEs in Jordan. Using the "drop and collect" method, 450 questionnaires were distributed and a 72% response rate was achieved for a total of 324 usable questionnaires. The study found that the firms' PAC had a significant effect on the RAC. Furthermore, both PAC and RAC demonstrated a significant positive relationship with the SME's innovative performance. Additionally, the relationship between RAC and IP was positive and significant, where it was moderated by IC, but not by PAC. Essentially, this study adds knowledge and offers insight pertaining to the impact of AC dimensions on innovative performance, as well as the moderating role of IC within the context of SMEs. Several theoretical and practical implications and suggestions for future research were discussed as well.

Keywords:
Small and Medium Enterprises (SMEs), Innovative Performance, Innovative Culture, Absorptive Capacity, Potential Absorptive Capacity (PAC), Realised Absorptive Capacity (RAC)

INTRODUCTION

In the global economy, Small and Medium Enterprises (SMEs) have become a growth engine. As highlighted in past studies (Ali et al., 2020; Schilirò, 2019), this growth generally revolves around the knowledge domains and their vital input innovation, as they ultimately impact the Gross Domestic Products (GDP). In today's challenging market, SMEs go all out in order to achieve success and sustainable competitive advantage. In Jordan, SMEs have a great impact on the economic growth, creativity, and employment (Alzuod et al., 2017; Al-Smadi, 2019; AL-Mahrouq, 2010), as evidenced by the fact that 95% of companies in Jordan are SMEs where they make up 40% of the country's GDP. Besides that, as reported by the Central Bank of Jordan (2017), about 40% of Jordan's workforce work in SMEs. SMEs in developing countries like Jordan face major challenges in matching their global competitors.

The political turbulence that has been consistently occurring in the region has led SMEs in Jordan to concentrate on innovation. Such decisions were made so that SMEs could expand their business rather than remaining stagnant. Alzuod et al. (2017) stated that innovation is an important precondition for economic growth that is also pivotal in achieving business balance. For SMEs, innovation determines success because it allows them to drive and enhance their competitive advantages over time (Ali et al., 2020; Limaj, Bernroider, 2019; Tian et al., 2020). Such success can lead to innovation and market growth at both local and global levels (Abdulaal, & Nordin, 2020; Ritala, 2012; Teguh et al., 2021). For SMEs, Sumiati (2020) proposed the development of novel and unique goods. Meanwhile, Maes and Sels (2014) stated that SMEs may not be able to effectively surpass their rivals in terms of products or processes if they do not innovate.

Absorptive Capacity (AC) and innovative performance are positively related. In this regard, companies that adopt AC show good performance. By choosing innovations, firms can define their innovation scope. Internal factors (including AC) dictate the types of innovation adopted by a company and a company's innovation culture (Ali, & Park, 2016; Martín-de Castro et al., 2013; Sumiati, 2020). It has been reported that for achieving competitive advantage, only certain resources are required. Notably, AC among SMEs has not been adequately examined (Zerwas, 2014). SMEs need to react to the rapidly changing market conditions despite the scarcity of the needed resources. In addition, SMEs need to incorporate corporate culture into their innovations, considering that SMEs in the manufacturing and services market found that corporate culture, which also affects inter-organisation relationships, were major hurdles in the implementation of the innovation model (Mazur & Zaborek, 2016; Van de Vrande et al., 2009).

Upon scrutinising the organisational culture types for innovation performance (product and process), innovative culture has been proposed as an antecedent (Ghasemzadeh et al., 2019; Hanifah et al., 2019; Iranmanesh et al., 2020; Mazur & Zaborek, 2016). As highlighted in several studies (Bausch & Balkin, 2013; Laforet, 2016), the culture embraced by an organisation either supports or opposes innovation. It has been found that innovation culture functions optimally within an environment that stimulates individual creativity. In this regard, an organisational culture or climate that supports innovation generally promotes innovative capacity as well as the personal growth and development of employees while also tolerating risks (Hanifah et al., 2019; Martín-de Castro et al., 2013).

The multidimensional nature of AC needs to be understood as AC is an internal organisational characteristic that can determine success (Zheng et al., 2010). AC can be achieved by understanding organisational factors, and these factors include Innovative Culture (IC). Nonetheless, Potential Absorptive Capacity (PAC) and Realised Absorptive Capacity (RAC) differ in terms of their specific aims, mechanisms, and techniques (Cepeda-Carrion et al., 2012;). Therefore, the manner in which PAC and RAC discretely offer a firm similar (or different) outcome was demonstrated in the work by Jansen et al. (2005) and it was also examined in the present study. As highlighted in several related studies (Cohen & Levinthal, 1990; Sumiati, 2020; Zahra & George, 2002; Zahra et al., 2009;), the establishment of related past knowledge can facilitate the formation of new essential cognitive skills that allow the effective discovery, attainment, understanding, conversion, and exploitation of new knowledge, which could impart SMEs with

competitive advantages. Being major economic drivers, SMEs should be examined in terms of how they could improve their AC so that they could in turn improve both their innovative productivity and competitiveness. Scuotto et al. (2017) stated that SMEs can convert knowledge into innovation performance through AC.
Considering the above, it is clear that studies on innovative performance among SMEs in the Middle East, especially in Jordan, have clearly been very limited, thus creating a substantial research gap within the existing literature. As such, more studies should be undertaken to address this topic and this study made such an attempt. As indicated in past studies (Alzuod et al., 2017; Boerhannoeddin, 2011; Van de Ven, 1986), innovative performance greatly facilitates the improvement of the competitiveness of SMEs. Another reason for carrying out this study is the importance of internal analysis of the organisational factors such as innovation culture as they provide an understanding on the multidimensional functions of AC. In view of this, Mae and Sels (2014) stated that the internal characteristics of an organisation are key sources of product innovation success in SMEs.

The present study was carried out to examine the relationship between PAC and RAC, investigate the direct effects of PAC and RAC on IP, and examine the moderating role of IC in the relationship between AC (PAC and RAC) and IP among SMEs in the manufacturing sector of Jordan. In order to accomplish this, two important firm theories were used. These theories provided the present study with a theoretical framework and research model for development.

THEORETICAL BACKGROUND

The Relationship between PAC and RAC

Over the last three decades, studies on Absorptive Capacity (AC) have led to many theoretical frameworks and measures. The combination of these models has reduced AC conceptualisation and study variation. The importance of AC establishment has been acknowledged and it has become a very crucial aspect in studies associated with new management. AC has been applied to illustrate various organisational phenomena (Volberda et al., 2010; Zahra & George 2002).

The concept of AC applied in this study is based on the work by Zahra and George (2002), where AC was described as the dynamic organisational processes and activities utilised by a company in attaining, assimilating, transforming, and exploiting knowledge. The authors classified AC into Potential Absorptive Capacity (PAC) and Realised Absorptive Capacity (RAC). Specifically, the acquisition and assimilation of PAC allows a firm to recognise and acquire external knowledge. However, this does not necessarily translate into external knowledge usage. On the other hand, the transformation and exploitation of RAC signifies the ability of a firm to use knowledge that has already been absorbed.
As stated in the work by Ali and Park (2016), knowledge on its own is not enough and assets are needed to ensure that this knowledge can be embedded effectively in new products and processes. Moreover, Leal-Rodríguez et al. (2013) stated that the acquisition and assimilation of knowledge are no assurance of efficient knowledge transformation and exploitation. Meanwhile, the capabilities and functions of PAC and RAC are distinct from each other, though their impact is complementary. Both of them have different systems, objectives, and strategies.

According to Zahra and George (2002), organisations do not actually exploit external knowledge if they did not obtain and create it beforehand. This means that PAC paves the way for RAC. Nonetheless, the external knowledge achieved by PAC needs to go through countless cyclical processes, and then organisations can adopt external knowledge for commercial purposes to create value through RAC (Van den Bosch et al., 1999). The acquirement and assimilation of some knowledge types by an organisation usually allows its members to develop new perspectives during exploitation. Jansen et al. (2005) stated that companies with the capability in knowledge transformation and exploitation (RAC) and yet fail in knowledge acquirement and assimilation (PAC) are likely to fail in their adaptation to environmental changes. Furthermore, Zahra and George (2002) mentioned that firms could not exploit knowledge without prior knowledge absorption as RAC requires the transformation and exploitation of assimilated knowledge.

Saad et al. (2017) further added that both types of knowledge support one another. In general, the increase in insight and perception brought by new knowledge (PAC) will increase the possibility of an organisation succeeding in its exploitation of the exciting opportunities identified in its environment (RAC). In addition, through PAC, RAC may be increased. Sciascia et al. (2014) stated that without sufficient acquisition and assimilation of external knowledge, SMEs may be faced with challenges when transforming the acquired knowledge to fulfil their needs. Moreover, SMEs in Jordan are mostly ill-equipped in the sense that they do not effectively internalise and translate such new knowledge into dynamic systems structures for better exploitation. Various mechanisms that have been positively associated with PAC and RAC were reported in the work by Jansen et al. (2005). Notably, the present study attempts to determine if PAC can positively predict RAC. It is possible that SMEs with higher AC would be better equipped in adopting or acquiring the newly-generated knowledge, in complementing the current knowledge with the past knowledge, and in utilising knowledge during the innovation process. Hence, the present study presents the following hypothesis:

H1. *The Potential Absorptive Capacity (PAC) positively affects the Realised Absorptive Capacity (RAC)*

The Relationship between PAC and IP

Innovation means the efficient and successful utilisation of new ideas (Marquis & Myers, 1969). This implies two conditions: novelty and use. Novelty is important because the innovation process actually makes use of inventions, new discoveries, or new manufacturing or management practices. On the other hand, value is necessary because products have to be usable or commercially efficient. Khalili et al. (2013) discussed the concept of innovative performance where it includes products and services of improved quality and the embracing of an organisational structure with competitive environment needs. Innovative performance also includes an organisation's inclination towards supporting fresh ideas, experimentation, and creative processes that assist the organisation in improving their products, services, or technology (Lita et al., 2018; Tian et al., 2021). AC and innovation have been found to have a strong positive relationship (Limaj, & Bernroider, 2019; Liu et al., 2021). On a relevant note, AC has been found to significantly impact success and innovative performance (Sciascia et al., 2014; Scuotto et al., 2017). As mentioned in the work by Cohen and Levinthal (1990) and Fosfuri and Tribó (2008), an organisation's AC alongside its dimensions are not a result in and of itself. Rather, AC is capable of generating major organisational results such as innovative performance. Through AC, SMEs can also exploit and use knowledge to improve the current products and services, which will consequently improve the innovative performance (Cohen & Levinthal, 1990; Zahra & George, 2002). Amassed past knowledge has a potential effect on organisations, especially with regards to the generation of innovation performance (Soo et al., 2017).

AC refers to a dynamic competence in knowledge related rivalries whereby a firm becomes capable of transforming knowledge into new products, services, or processes that support innovative performance (Cepeda-Carrion et al., 2012; Leal-Rodríguez et al., 2013). Furthermore, firms attain new knowledge through PAC from different sources and assimilate it into new products and innovation processes. In general, innovative performance could result from the use of new ideas and their connection to relevant past knowledge and resources to establish new products, services, or processes.

Hence, acquisition allows firms to adaptably recognise and evaluate external knowledge related to the real needs of process improvements, and then make adjustments to the external knowledge that fit the specific characteristics of a firm such as technology, processes, people, and strategy of business (Vega-Jurado et al., 2008; Zahra & George, 2002).

The above findings show that organisations with a strong PAC will absorb or acquire newly-generated information, blend it with the past knowledge, and apply it to the innovation process. Furthermore, studies on AC dimensions among SMEs appear to be lacking (Zerwas, 2014). SMEs need to quickly respond to the erratic economic conditions using limited resources. Meanwhile, PAC has to be

separately examined. Thus, the following hypothesis is formed:

H2: *A positive relationship exists between the Potential Absorptive Capacity (PAC) and Innovative Performance (IP)*

The Relationship between RAC and

As highlighted previously, organisations can acquire new external knowledge through PAC. However, as mentioned by Camisón and Forés (2010), PAC does not necessarily allow an organisation to exploit this new knowledge like RAC does through the creation of new products and processes. In this regard, RAC is highly important for the exploitation of knowledge and the creation of value. RAC involves the transformation and exploitation of the acquired and assimilated knowledge through organisational improvements and the refinement of organisational routines, which allow the current and new knowledge to be merged and integrated into organisational activities.

As indicated by Leal-Rodríguez et al. (2013), PAC and RAC are conceptually distinct and play different roles. Still, they are interdependent and reciprocally supportive. Aribi and Dupouët (2015) stated that RAC allows SMEs to understand and deal with the complexity and the conditions of their environment. Greve et al. (2009) additionally stated that RAC facilitates the forming of new routines in organisations. According to Jiménez-Barrionuevo, García-Morales, and Molina (2011), this can prompt people to transform their behaviour and attitudes to support innovation and performance improvement. Usually, successful RAC needs the adoption of an enduring and sustained learning and knowledge acquisition process (Greve et al. 2009), as opposed to the unstructured, short-term learning method being applied by many SMEs (Kahraman, & Bozbura, 2007).

Previous AC studies (Cepeda-Carrion et al., 2012; Jansen et al., 2005; Prajogo, & Ahmed, 2006; Liu et al., 2021) show that RAC involves transformation and exploitation, which facilitates the formation of new ideas and changes in people's behaviour. This in turn leads to improved innovation performance in an organisation. Furthermore, the dynamic aspect of RAC is related to the capability of SME manufacturers to reconfigure their practical competencies to improve innovative performance. Thus, the present study brings forth the following hypothesis:

H3. *A positive relationship exists between the Realised Absorptive Capacity (RAC) and Innovative Performance (IP)*

Innovative Culture Moderates the Relationship between PAC–RAC, and IP

Corporate culture has been examined as a moderating factor that improves general performance, including innovation (Hsu & Fang, 2009; Prajogo & Ahmed, 2006). In the work by Donate and Canales (2012), the multiplier effect of organisational culture on the practices of knowledge management and innovation tools was discussed (Martín-de Castro et al., 2013). As mentioned in the relevant research works of Zheng et al. (2010), such effects may promote or hinder knowledge activities and the firm's organisational learning. Martín-de Castro et al. (2013) stated that a corporate culture or climate that fosters the creative abilities of employees, accepts risks, and provides support for personal development has an innovative culture, which comprises a vital organisational factor that improves a firm's knowledge base and improves innovation outputs.

Additionally, innovative culture forms a fitting environment for the adoption of new work processes, the contemplation of novel operational methods, and the accomplishment of superior innovation outputs (Ali, & Park, 2016). Innovative cultures require norms that stimulate creativity, which are extensively shared among employees, thus pushing them to innovate (Hanifah et al. 2019; Iranmanesh et al., 2020; Liu et al., 2021; Na et al., 2018). Such norms contribute to the formation of AC (De Long & Fahey, 2000). Miron et al. (2004) stated that with poor innovative culture, organisations become more dependent and less flexible when it comes to decision-making, and this situation hinders the creativity of employees in their pursuit of new knowledge.

As proposed by the knowledge-based view, contextual factors impact the link between AC and the outcomes (Van den Bosch et al., 1999; Volberda et al., 2010). Appositely, several studies including the work by Zheng et al. (2010) and Shrafat (2018) referred to IC as a contextual factor or social environment that stimulates or hinders knowledge activities as well as a firm's organisational learning. The relevant and significant impact of shared

organisational values on the readiness of the owners of knowledge towards sharing the aforesaid knowledge with others was evidenced in the work by Jarvenpaa and Staples (2001). It was concluded by Harrington and Guimaraes (2005) that organisations focusing on creativity and innovation appear to exhibit superior external learning capability, especially with regards to knowledge acquisition, hence leading to increased AC. According to Ghasemzadeh et al. (2019), innovative culture can be regarded as a knowledge resource because organisational culture enables the creation, acquirement, sharing, and management of knowledge among members within a certain context.

As such, in a dynamic business environment, organisations have to know the values that can propel and support the culture of such an environment in order to succeed. For SMEs, particularly those operating in Jordan, innovation culture needs to be adopted to strengthen innovative competences and improve competitive advantages (Pharaon, & Burns, 2010). Lita et al. (2018) stated that with innovative culture, SMEs would be able to stimulate the creativity, innovativeness, and alertness of employees in driving their organisation. Innovative culture and its values have been linked to AC. It impacts the desire for and the reaction towards obtained and converted information by way of external and internal communication channels into organisational knowledge.

Considering the above, this study perceives innovative culture as promoting the creative capacities of employees. Such a culture also accepts risks and supports personal development. All of these improve a firm's AC, thus resulting in superior innovative performance. As such, it is theorised that innovative culture is vital to the dimensions of AC. As an important concept, AC may utilise strategies and structures. Nonetheless, the factors that moderate the relationship between different AC dimensions have yet to be explored. Thus, the effects of PAC and RAC on a firm's outcome may be based on different innovative cultures (Liu et al., 2021; Xie et al., 2018). The hypotheses below are therefore presented.

H4. *Innovative culture positively moderates the relationship between PAC and innovative performance*

H5. *Innovative culture positively moderates the relationship between RAC and innovative performance*

RESEARCH METHODOLOGY

Collection and Sample

The study population was made up of Jordanian manufacturing SMEs, specifically the owners and managers of manufacturing SMEs in Jordan. The population list was officially attained from the Jordan Chamber of Industry (JCI) list, which consisted of 1,784 firms. SMEs were selected according to their number of employees (10 to 250).

Data was gathered through self-administered questionnaires that were disseminated to the study sample, which consisted of 473 SME managers/owners. A probability sampling design was applied through the use of simple random sampling. According to Cavana et al. (2001) and Hair et al. (2007), this type of sampling ensures equivalent and independent data representation. The data collection phase took four months. This study achieved a 69% response rate, as reflected by the return of 324 usable surveys.

Measurement Items

This study's measurement items were originally composed using English language and translated into Arabic language. Item validity was assured through a rigorous process to ensure that the questions were clearly understood. The items were answered with a five-point Likert scale ranging from 1 = "strongly disagree" to 5 = "strongly agree". In the measurement of AC, 13 items were adapted from the work by Limaj and Bernroider (2019), 7 of which measured PAC and 6 of which measured RAC.

A total of 4 items were used to measure Innovative Culture and these items were adapted from the works of Martín-de Castro et al. (2013) and Ali and Park (2016). To measure the innovative performance of participants, this study employed 9 items adapted from the research works by Gunday et al. (2011) and Oke (2013). These items included processes, products, and structure.

RESEARCH RESULTS

The Structural Equation Modelling (ESM) technique based on the research work by Hair et al. (2011) was used in this study. It was run

using AMOS 20. Confirmatory Factor Analysis (CFA) was executed on the four study constructs. The hypothesised direct, mediating, and moderating effects between these constructs were examined. Two main components were used in evaluating CFA, which were convergence validity and discriminant validity. As explained by Hair et al. (2010), convergent validity relates to the degree to which various efforts of measurement of identical concept are concurring. Accordingly, the convergent validity results can be viewed in Table 1.

Table.1: Convergent Validity and Internal Reliability

Construct	**Item Number (26)**	**Factor Loading Range**	**Average Variance Extracted (AVE)**	**Composite Reliability (CR)**	**Internal Reliability Cronbach Alpha**
Potential Absorptive Capacity (PAC)a	7	0.712 – 0.801	0.584	0.894	0.893
Realised Absorptive Capacity (RAC)b	6	0.749 – 0.852	0.632	0.911	0.913
Innovative Culture (IC)	4	0.850 – 0.914	0.788	0.937	0.936
Innovative Performances (IP)b	9	0.773 – 0.818	0.637	0.941	0.941

Note: Sample Size = 324; **a:** PAC4 was removed from the model because of insufficient factor loading, which was less than 0.5;
b RAC3& RAC5 and IP2& IP4 were mutually linked to each other because they provided high error covariance

Table 1 presents the standardised loadings result for the items. As shown in Table 1, the factor loading of all items were greater than the value of 0.5, which was proposed by Hair et al. (2006). Specifically, they fell in the range from 0.712 to 0.914. Denoting the overall amount of variance in the indicators of a latent construct, the Average Variance Extracted (AVE) values fell between 0.584 and 0.788. These values were higher than the 0.5 that was proposed by Hair et al. (2010). Meanwhile, the Composite Reliability (CR) values were between 0.894 and 0.941, which was larger than the recommended value of 0.6 by Hair et al. (2010). Specifically, CR denotes the level to which the indicators of a construct denote that construct. The internal reliability of the measures was determined through the use of Cronbach's Alpha, and the obtained values fell between 0.893 and 0.941. These values were greater than Nunnally and Bernstein's (1994) recommended threshold value of 0.7.

Table 2 displays the discriminant validity outcomes, which show how much a given construct is justifiably different when compared to other constructs (Fornell & Larcker, 1981; Hair et al., 2006).

Table 2: Discriminant Validity and Descriptive Statistics

Construct	**Mean**	**Std. Dev.**	**PAC**	**RAC**	**IC**	**IP**
Potential Absorptive Capacity (PAC)	3.690	0.855	0.764			
Realised Absorptive Capacity (RAC)	3.607	0.926	0.450	0.795		
Innovative Culture (IC)	3.203	1.283	0.028	-0.019	0.888	
Innovative Performances (IP)	3.548	0.954	0.396	0.301	0.077	0.798

Note: Diagonals represent the square root of the extracted average variance while the other entries represent the correlations;

As can be viewed in Table 2, this study found that the square root of the extracted average variance for all constructs was larger than the correlations of other constructs. These results are in accordance with the work by Hair et al. (2010). The results show that the correlations were smaller than the threshold value of 0.85. Specifically, the values obtained fell between -0.019 and 0.450. Based on the study by Kline (2010), the constructs can be said to have good discriminant validity. Additionally, Table 2 exhibits the descriptive statistics of the constructs, including the mean and standard deviation. From the results, the lowest mean value was scored by IC while the highest mean value was scored by PAC. For the standard deviation, PAC scored the lowest and IC scored the highest.

The goodness of fit for the measurement model is presented in Table 3. Three structural models were proposed. Accordingly, the AMOS graphs corresponding to each model can be viewed in Figures 1 and 2. In the Measurement Model, CFA was carried out using the convergent and discriminant validities. Meanwhile, in the First Structural Model, the direct effect of PAC on RAC (i.e., H1+) can be observed. Similarly, the direct effect of PAC and RAC on IP (i.e., H2+ and H3+, respectively) can also be observed. These effects were examined using path analysis. When evaluating the moderating effect of IC on PAC and the moderating effect of RAC on IP (i.e., H4+and H5+, respectively), this study utilised the approach proposed by Aiken and West (1991) in the Second Structural Model.

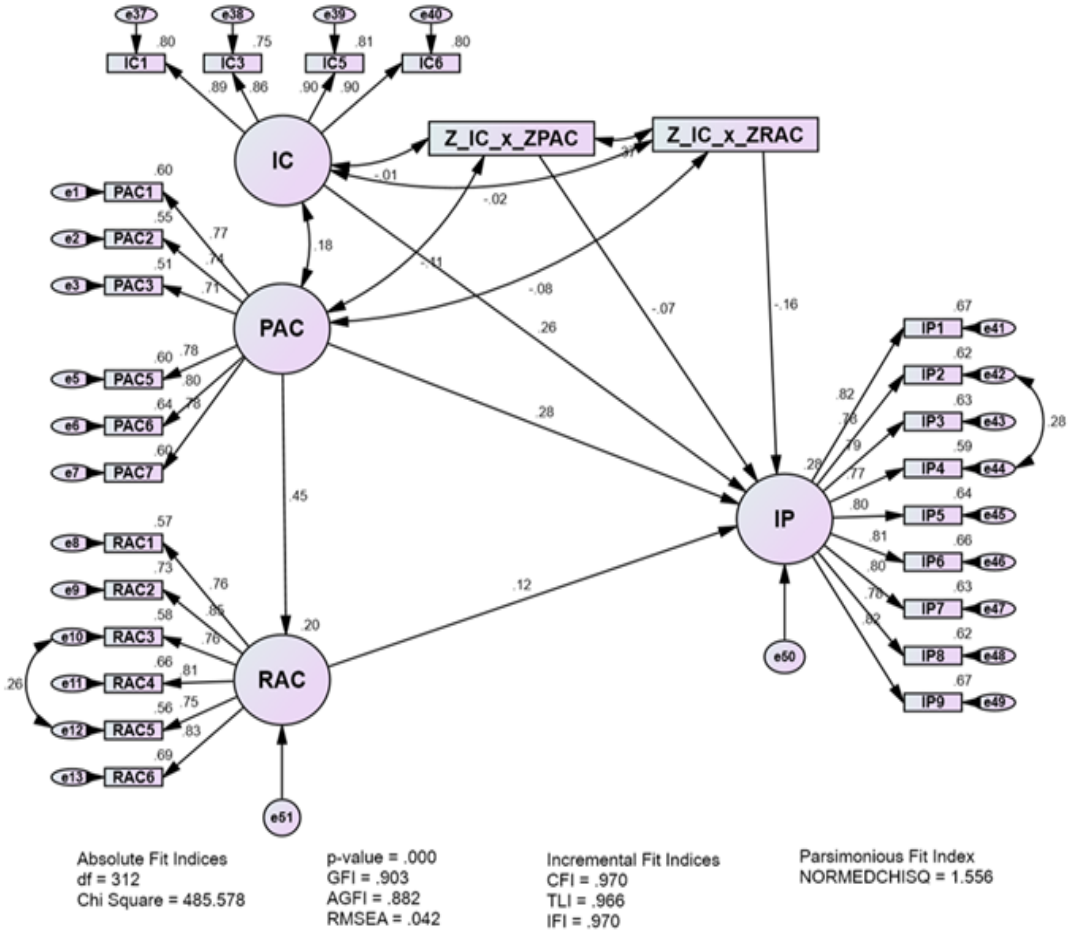

Fig. 1: Structural Model #2: Moderation Effects

From the results shown in Table 3, it can be concluded that the proposed model provided adequate data fits for all measurement and structural models based on the suppositions of past works (Bagozzi & Yi, 1988; Byrne, 2013; Fornell & Larcker, 1981; Hair et al., 2006; Ho, 2006; Schumacker & Lomax, 2010).

Table 3: Goodness of Fit Results for Measurement & Structural Models

	Measurement Model	**Structural Model #1**	**Structural Model #2**
Examined Effect	CFA	Direct Effects	Moderation Effects
Examined Hypotheses	---	H1, H2, H3	H4, H5
CMIN (χ2)	425.065	321.683	470.641
df	267	184	312
p-value	0.000	0.000	0.000
χ2/df ≤ 5.00	1.592	1.748	1.508
GFI ≥ 0.80	0.908	0.915	0.907
AGFI ≥ 0.80	0.888	0.893	0.887
CFI ≥ 0.90	0.972	0.969	0.972
TLI ≥ 0.90	0.968	0.965	0.969
IFI ≥ 0.90	0.972	0.969	0.972
RMSEA ≤ 0.10	0.043	0.048	0.040
SRMR ≤ 0.08	0.039	0.041	0.040

Note. GFI = Goodness-Of-Fit statistic; AGFI = Adjusted Goodness-Of-Fit statistic; CFI = comparative fit index; TLI = Tucker-Lewis index; IFI = Incremental Fit Index; RMSEA = Root Mean Square Error of Approximation

Table 4 shows the examination results for the two structural models and their associated hypotheses. As demonstrated in Structural Model #1, PAC had significant positive effects on both RAC (β = 0.450, p < 0.001, H1+ = Supported) and IP (β = 0.327, p < 0.001, H2+ = Supported). Additionally, the results demonstrate a positive and significant effect from RAC on IP (β = 0.153, p < 0.05, H3+ = Supported). Furthermore, Structural Model #2 shows a significant effect from the interaction between IC and PAC on IP (β = -0.020, p > 0.05, H4 = rejected). In addition, a significant positive effect was seen in the interaction between IC and RAC on IP (β = 0.223, p > 0.001, H5 = supported). On the other hand, the resultant coefficient for determining R2 proved to be a better fit for Structural Model #2 as its Innovative Performance (IP) was 5% more than it was for Structural Model #1 (ΔR2(IP) = 0.05).

Table 4: Examination Results for the Hypotheses

DV / **IV**	**Structural Model#1**		**Structural Model#2**
	RAC	**IP**	**IP**
PAC	0.450^{***b}	0.327^{***b}	0.305^{***}
RAC	---	0.153^{*c}	0.182^{**}
IC	---	---	0.075
PAC * IC	---	---	-0.020^{d}
RAC* IC	---	---	0.223^{***e}
R^2	0.20	0.18	0.23
ΔR^2			0.05

Note: N = 324; a: Demonstrated hypothesis H1+ is supported; b: Demonstrated hypothesis H2+ is supported;
c: Demonstrated hypothesis H3+ is supported; d: Demonstrated hypothesis H4 is rejected; e: Demonstrated hypothesis H5 is supported; ∗p < .05. ∗∗p < .01. ∗∗∗p < .001.

Two-way multiplicative interactions were plotted based on the suggestion of Aiken et al. (1991). This was to further interpret the moderating effect of IC on the relationship between RAC and IP. The standard deviation above and below the mean of the corresponding predictive variables were used as shown in Figure 3.

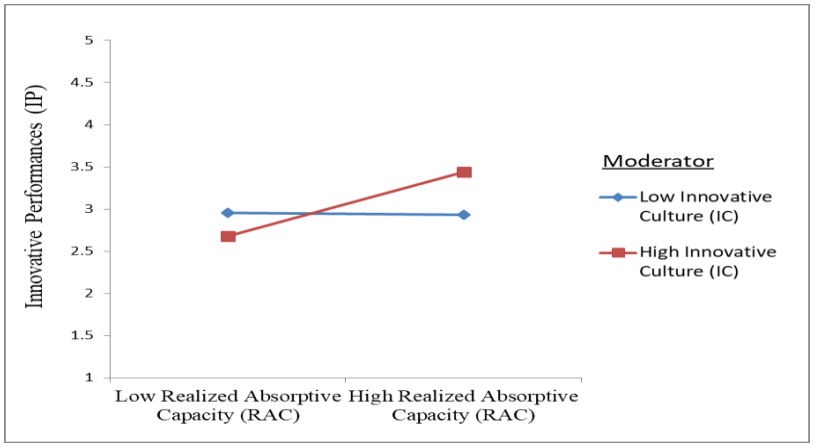

Fig. 1: Innovative Culture (IC) dampens the relationship between Realised Absorptive Capacity (RAC) and Innovative Performances

As observed in Figure 1, for low levels of IC, the relationship between RAC and IP was neutral, while for high levels of IC, the relationship between both constructs was positive. It can be interpreted from the results that the relationship is stronger (weaker) for high (low) levels of IC compared to that of low (high) levels. As such, the detrimental effect of RAC on IP will be stronger (weaker) at higher (lower) levels of IC. The obtained results imply that IC strengthens the positive relationship between RAC and IP.

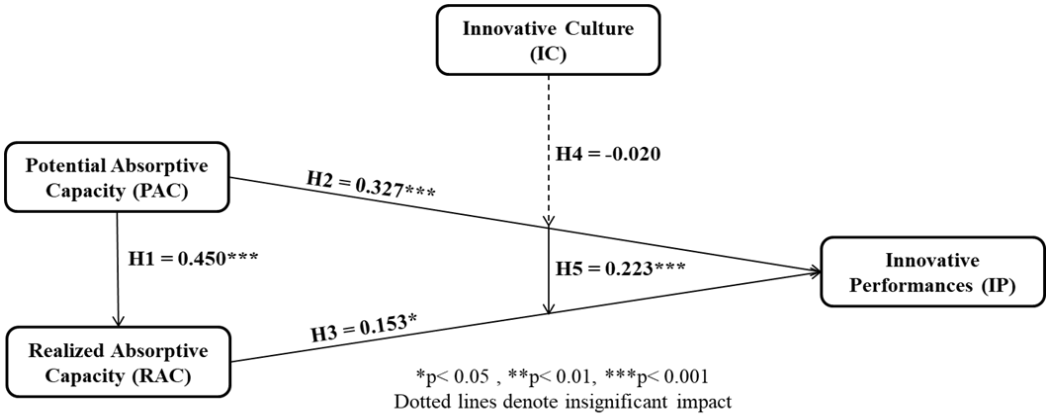

Fig. 1: Model Findings

DISCUSSION AND CONCLUSION

Notably, constraints in major resources and restriction in the practices of management impact the adoption and integration of new knowledge. Nonetheless, SMEs still need to reposition themselves, and this could be achieved through the effective development of their knowledge-based resources. It is a well-known fact that survival in turbulent environments requires various knowledge-enhancing practices for the creation of organisational knowledge that increases the ability of firms to innovate new products and processes to deal with the challenges of the erratic and innovative manufacturing sector (Xie et al., 2018).

The application of KBV theory in this study to describe how a given firm accomplishes IP through AC and IC adds to the extant literature. The use of this theory supports the positive impact of PAC and RAC as the two major AC dimensions on IP. From the results, this study concluded that innovative performance could be improved through the acquisition of knowledge in addition to the integration of current and new knowledge via AC. Additionally, empirical studies that include the aforementioned frameworks are still limited. Hence, new and exploratory theoretical and empirical studies need to be carried out. In particular, this study empirically contributes to the subject while also being among the first to

evaluate the depth and multidimensional nature of AC among SMEs in Jordan.

From the nomological web provided in the study's proposed conceptual model, the obtained statistical results for AMOS-SEM support this study's main research targets. The strong positive effect of PAC on RAC observed in this study appears to be in agreement with the key postulations on AC and its cumulativeness, as mentioned in several studies (Ali, & Park, 2016; Cohen & Levinthal, 1990; Leal-Rodríguez et al., 2013; Roper et al., 2008), particularly concerning PAC and RAC as discussed in the work by Zahra and George (2002). PAC and RAC are significantly linked and are mutually supportive. Furthermore, a high PAC is able to leverage RAC and consequently AC in general. Still, it is inadequate to develop just PAC.

A direct and significant positive effect from both PAC and RAC on IP was evidenced in the results. This study thus affirmed the positive impact of a firm's absorptive capacity on innovation performance (Maes, & Sels, 2014). Hence, in order for SMEs to drive innovation, AC needs to be considered as a vital competitive advantage source (Scuotto et al., 2017). Absorptive capacity should therefore become a driver to facilitate the achievement of stronger competitive advantages, which would result in better performance (Saad et al., 2017). For SMEs, the use of people-centred knowledge management will allow for the immediate utilisation of AC (Saad et al., 2017; Scuotto et al., 2017).

The present study expands on past studies that applied a culture-independent interpretation towards the AC-innovation value chain (Ali, & Park, 2016; Zerwas, 2014). Also, this study affirms the positive and significant moderation of IC on the relationship between RAC and IP. However, in the analysis of PAC, IC does not play a moderating role. As such, it can be deduced that the impact of RAC on IP is greater in organisations that have IC of higher levels. According to Martín-de Castro et al. (2013), through IC, employees can effectively exploit their skills, knowledge, or experience to produce new ideas that enhance processes and develop products. In essence, Ghasemzadeh et al. (2012) mentioned that IC stimulates the participation of employees in more complex technologies, which results in the creation of new products and processes for the marketplace.

The non-influence of IC on PAC might be caused by the firms' heavy need of resources for the acquirement and assimilation of knowledge. It also shows the need of firms to reduce their focus on their artefacts, values, and basic underlying assumptions. Also, IC is impeded from playing its role by the strict rules in the acquisition and assimilation of external knowledge in the scope of interactions with a knowledge sender, and thus, IC cannot affect PAC. In order to control acquisition using these rules, management should identify the reason why IC fails to sufficiently function.

The effective utilisation of external knowledge has been linked to the need for SMEs to develop systems, procedures, rules, and routines with greater level of formality in order to address their weak points, while also nurturing their interest in learning and innovation. Corporate managers should thus intensively utilise their administrative function. They should also initiate the process of AC in Jordanian SMEs so that sustainable competitive advantages can be attained, especially with regards to IP, as implied by this study's outcomes.

LIMITATIONS AND FUTURE RESEARCH

Manufacturing SMEs in Jordan were the sample of this study, making its outcomes rather limited in terms of generalisability. Hence, in order to increase the generalisability, similar studies should be carried out among SMEs in other sectors such as services and information technology in Jordan. Hence, the integrated model of AC, IC, and IP could be applied to SMEs in various sectors. Furthermore, future research could be carried out in other developing countries to investigate cross-culture differences in organisational mechanisms that address AC, IC, and IP. The nature of a company's operations has caused service innovations to be rather neglected in manufacturing companies, thus they were not considered as an IP in this study. Hence, this element can be included as an innovation measurement in studies on other sectors. Finally, as IC was the only construct considered as a moderating variable, other potential moderating factors could be explored in future studies.

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