



Assessing the employees' Absorptive Capacity effect on the innovation Performance of the Egyptian Travel Agencies

Mahmoud Ahmed Aboushouk

Department of Tourism-Faculty of Tourism and Hotel Management, Pharos University in Alexandria, Egypt

ORCID: 0000-0001-6004-4863

Abstract

This study assesses the effect of employees' absorptive capacity including knowledge acquisition, knowledge assimilation, and knowledge exploitation on the innovation performance within the specific context of Egyptian travel agencies.

The study utilizes a deductive approach and employs quantitative methods, particularly structural equation modeling (SEM), for the purpose of data analysis. A semi-structured questionnaire is administered to a sample of 278 travel agencies from 1008 Egyptian travel agencies class A, and the findings of the study reveal significant insights.

Firstly, the study found that knowledge acquisition by employees has a considerably positive influence on innovation performance, thereby confirming the first hypothesis (h1). This highlights the significance of investing in training, education, and mechanisms that facilitate the sharing of knowledge in order to enhance innovation within Egyptian travel agencies.

Secondly, the study demonstrated that the assimilation of knowledge has a moderately positive effect on innovation performance, thereby supporting the second hypothesis.

This result emphasizes the importance of not only acquiring knowledge, but also effectively integrating and utilizing it within the organizational framework. Thirdly, the study establishes that knowledge exploitation has a substantial positive impact on innovation performance, thus providing corroboration for the third hypothesis.

This finding underscores the importance of effectively leveraging existing knowledge and resources in order to stimulate innovation performance within Egyptian travel agencies.

The study findings encompass practical recommendations for travel agency managers to enhance both absorptive capacity and innovation performance. These recommendations include fostering a culture of learning, promoting the sharing of knowledge, ensuring access to external information, embracing diversity within teams, supporting initiatives aimed at innovation, establishing feedback mechanisms, and measuring and evaluating performance.

Additionally, the study suggests exploring contextual factors, conducting cross-industry comparisons, and investigating the role of technology, leadership, and customer-centric approaches in influencing absorptive capacity and innovation within the Egyptian travel agency sector.

This research contributes to a deeper understanding of how knowledge management can drive innovation within the travel industry, and it provides valuable insights for both academia and industry practitioners.

Keywords: Absorptive Capacity, Innovation performance, Egyptian Travel agencies.

1 Introduction

The study aims to investigate the employees' absorptive capacity (AC) and its impact on the innovation performance of Egyptian travel agencies. This research builds upon previous studies such as Aboushouk, M. A. (2022) and Aboushouk & Tamamm (2021) that have explored the relationship between intellectual capital (IC) and innovation performance in the context of Egyptian travel agencies.

The focus on employees' absorptive capacity specifically is a unique aspect of this study, as it has been identified as a key factor in the digital transformation of tourism and travel services in Egypt according to Aboushouk, M. A. (2022).

The researchers seek to provide empirical evidence to travel agency managers regarding the importance of strong absorption capacity, particularly in the human aspect, for enhancing innovation performance. By understanding the role of employees' absorptive capacity in driving innovation, travel agency managers can make informed decisions and implement strategies to foster a culture of innovation within their organizations.

The research also identifies a research gap in understanding the relationship between employees' AC and innovation performance within the Egyptian travel agency industry, considering the industry-specific challenges and opportunities. The existing literature lacks empirical studies in the Egyptian context and tends to focus on specific dimensions of AC rather than its overall impact on innovation performance. Therefore, further research is needed to bridge these gaps and gain a better understanding of the topic.

The findings of this study are expected to contribute to the existing body of knowledge on the relationship between intellectual capital, employees' absorptive capacity, and innovation performance in the context of Egyptian travel agencies. This research can also serve as a reference for other industries and countries looking to enhance their innovation capabilities and competitiveness.

This research has numerous consequential impacts, both on the realm of academic knowledge and the realm of practical applications within the context of the Egyptian travel industry.

Academic Impact, firstly, the research has the potential to make a significant contribution to the academic literature by addressing a gap in understanding regarding the influence of absorptive capacity, which refers to an organization's ability to acquire, assimilate, and apply external knowledge, on innovation performance within a specific industry and cultural context. Secondly, the findings from this research have the potential to be applied to other industries or countries facing similar challenges, thus making the research relevant beyond the specific context of Egyptian travel agencies. Thirdly, the study develops or refines measurement tools or methodologies for assessing absorptive capacity and innovation performance in a specific context, so it can make significant methodological advancements that will benefit future research.

Practical Impact, a. the research can provide valuable practical insights to Egyptian travel agencies on how to improve their innovation performance. By understanding the factors that influence employees' ability to absorb external knowledge, agencies can develop strategies to effectively leverage that knowledge for innovation. b. travel agencies that can effectively utilize the absorptive capacity of their employees may gain a competitive advantage in a fast-paced industry. They can adapt more effectively to evolving customer preferences, emerging technologies, and market trends. c. the research may have implications for government policies and regulations related to the travel and tourism sector in Egypt. Insights into how absorptive capacity impacts innovation can inform policy decisions aimed at fostering industry growth and sustainability. d. The findings can provide guidance for human resource practices within Egyptian travel agencies. Understanding the skills and training necessary to enhance absorptive capacity can inform recruitment, training, and development programs for employees.

2 Literature Review

2.1 Absorptive capacity

One concept that has been extensively researched in the field of innovation is absorptive capacity. It refers to an organization's ability to acquire, assimilate, transform, and apply external knowledge for innovation (Cohen & Levinthal, 1990). The importance placed on absorptive capacity stems from its impact on a company's innovative skills and ability to thrive in a changing business environment (Cohen & Levinthal, 1990; Zahra & George, 2002).

Cohen and Levinthal (1990) were the first to introduce absorptive capacity and emphasized its significance in transferring knowledge from external sources. They argued that organizations with better absorptive capacity are better equipped to recognize, assimilate, and exploit external knowledge. This groundbreaking study laid the foundation for future research on absorptive capacity and its relationship with organizational learning.

Zahra and George (2002) expanded on the concept of absorptive capacity by distinguishing between potential absorptive capacity and realized absorptive capacity. Potential absorptive capacity refers to an organization's ability to understand the value of knowledge from external sources, while realized absorptive capacity measures how well an organization can actually use this information. The authors stressed the need for companies to develop both aspects of their knowledge absorption ability in order to enhance their learning capabilities.

Lane et al. (2006) introduced the idea of "knowledge stickiness," which further advanced our understanding of absorptive capacity. They argued that certain categories of knowledge are more difficult to transfer and absorb due to differences in absorptive capacities across various knowledge domains. In examining the implications of absorptive capacity for organizational learning, their study emphasized the importance of considering the nature of knowledge.

Furthermore, Lane et al. (2006) found that organizational culture, leadership, and

knowledge management practices significantly influence absorptive capacity. They argued that an open culture that promotes learning, along with leaders who support new ideas and effective knowledge management practices, enhances an organization's ability to absorb information.

Driessen and Hillebrand (2013) explored the role of absorptive capacity in the context of open innovation. They found that firms with greater absorptive capability are more likely to engage in open innovation practices and effectively leverage external sources of knowledge. Their research highlighted the significance of absorptive capacity in enhancing collaboration and information exchange with partner companies outside the organization.

Teece (2014) proposed the concept of dynamic capability framework, which considers absorptive capacity as a fundamental requirement for organizational adaptability and learning. According to Teece, absorptive capacity enables businesses to identify and exploit opportunities, restructure resources, and continuously maintain their competitive edge. This model provides a holistic understanding of how absorptive capacity contributes to organizational learning and strategic adjustment.

The antecedents of absorptive capacity, as defined by Cohen and Levinthal (1990) and Zahra & George (2002), involve an organization's ability to recognize, assimilate, transform, and commercially utilize external knowledge. Van den Bosch et al. (1999: 76) offer a slightly different definition, stating that absorptive capacity means being able to evaluate, acquire, integrate, and apply new external information.

Zahra and George (2002) redefine absorptive capacity as a dynamic ability comprising organizational routines and strategic processes that enable organizations to acquire, assimilate, transform, and utilize knowledge for value creation. They differentiate absorptive capacity into potential absorptive capacity (knowledge acquisition and assimilation) and realized absorptive capacity (knowledge transformation and exploitation) using four dimensions.

Lane et al. (2006) describes absorptive capacity as a company's ability to benefit from external information through exploratory, transformative, and exploitative learning. Todorova and Durisin (2007) define absorptive capacity as the recognition, acquisition, conversion or integration, and application of knowledge.

Absorptive capacity is considered a prerequisite for innovation, enabling access to and utilization of external knowledge in organizational processes. While many studies have examined how absorptive capacity influences innovation in the tourism industry, few have explored its impact on innovation in other industries. Additionally, the impact of each dimension of absorptive capacity has been examined concurrently rather than as a sequential process.

Absorptive capacity fosters creativity by promoting collaborative networks, facilitating the recognition and assimilation of knowledge, and aiding firms in distinguishing what is new from what is not. In high-tech environments, networking with diverse stakeholders outside the organization can maximize the advantage of potential absorptive capacity.

Realized absorptive capacity enables the application of knowledge acquired through connections with shared goals and objectives. In dynamic contexts, implementing absorptive capacity empowers businesses to design efficient procedures based on information gathered from stakeholders with aligned aims, leading to more proactive, innovative, and risk-taking behavior.

Various factors can influence an organization's absorptive capacity, including prior related knowledge. This refers to the knowledge that an organization already possesses in a specific field or area. The greater the knowledge an organization has in a particular domain, the more effectively it can assimilate and leverage new knowledge, resulting in increased levels of innovation (Cohen and Levinthal, 1990).

Internal knowledge-sharing processes within a firm play a vital role in determining its absorptive capacity. Nonaka and Takeuchi (1995) highlight the significance of knowledge creation and sharing within an organization to

strengthen absorptive capacity. They introduce the concept of "tacit knowledge," which is based on individuals' experiences and skills. Nonaka and Takeuchi (1995) argue that organizations can improve absorptive capacity and enhance their innovative performance by facilitating the transfer of tacit knowledge through socialization and internalization processes.

External factors also have a significant impact on the development of absorptive capacity. One such factor is the availability of external knowledge sources. Organizations that actively seek and collaborate with external sources of knowledge, such as research institutions, customers, and industry experts, are more likely to possess higher absorptive capacity and achieve superior innovative performance (Zahra & George, 2002).

Organizations with a strong internal knowledge base are more likely to have higher absorptive capacity. This is because they have a solid foundation that enables them to effectively acquire and integrate new knowledge (Adiguzel & Koseoglu, 2018). This highlights the importance of investing in human capital and implementing training and development programs in tourism organizations to enhance absorptive capacity.

Furthermore, research emphasizes the significance of incorporating external sources of knowledge to enhance absorptive capacity. Adiguzel and Koseoglu (2018) argue that tourism firms that actively pursue partnerships with external entities like universities, research institutes, and industry associations are more likely to possess higher absorptive capacity. These external knowledge sources provide valuable opportunities to access new concepts, optimal strategies, and current industry trends, which can be assimilated and transformed into innovative offerings, services, and processes.

Wang and Noe (2010) conducted a study to examine how prior knowledge and learning orientation influence an individual's absorptive capacity. The results indicated that individuals with more prior knowledge and a stronger desire to learn were more likely to have higher absorptive capacity. This suggests that a strong foundation of existing knowledge helps in

comprehending and integrating new information, while a proactive learning attitude indicates the motivation and enthusiasm to actively acquire new knowledge. The study highlights the significance of both prior knowledge and learning orientation in improving an individual's absorptive capacity. Socialization also plays a vital role in the socialization process within an organization, impacting an individual's absorptive capacity. This process involves the interactions and relationships individuals build with their colleagues and peers. Lane et al. (2006) found that individuals who had more opportunities for socialization and collaboration were more likely to enhance their absorptive capacity. This is because socialization creates an environment for knowledge sharing and transfer, allowing individuals to learn from others and expand their knowledge.

Additionally, it is important to note that an individual's cognitive capacity plays a significant role in their ability to absorb information (Darr et al., 2019). Cognitive capacity refers to an individual's ability to understand and solve problems. Research conducted by Darr et al. (2019) revealed that individuals with higher cognitive capacity were better able to understand and incorporate new knowledge. This can be attributed to the fact that cognitive capacity enables individuals to effectively process and integrate complex information, allowing them to successfully apply new knowledge in their professional pursuits.

However, it is crucial to acknowledge that several studies have highlighted potential obstacles to the development of absorptive capacity. For instance, Zahra and George (2002) and Fathy (2021) argue that organizational inertia and resistance to change can hinder the acquisition and integration of external knowledge. Furthermore, Cohen and Levinthal (1990) highlighted the potential limits to an organization's absorptive capacity, as it may become overwhelmed with new knowledge and face challenges in effectively leveraging it.

2.2 Innovation performance of travel agencies

Innovation performance is an important aspect for organizations to generate and implement new ideas, according to Chen et al. (2014) and Cai et al. (2018). Higher innovation performance leads to a greater capacity for generating new ideas and also results in higher financial performance. This is because innovation performance allows organizations to create unique products or services, which can attract more customers and command higher prices. Additionally, innovation performance can lead to cost savings and increased operational efficiency, contributing to overall organizational success.

In today's fast-paced business environment, innovation performance has become crucial for organizations to gain a competitive advantage. Tidd and Bessant (2018) emphasize the importance of organizations' ability to generate and implement innovative ideas to stay ahead and adapt to changing market conditions. Therefore, understanding the factors that influence innovation performance is essential for organizations to foster a culture of innovation and achieve sustainable growth.

Knowledge sharing also plays a crucial role in facilitating innovation performance within organizations. Wang and Noe (2010) highlight that when employees share their knowledge and expertise, it enables the organization to tap into a broader pool of ideas and perspectives. This exchange of knowledge fosters collaboration and enhances overall creativity and innovation within the organization (Huang, 2016). Grant (2013) further supports this notion, stating that knowledge sharing positively influences innovation performance by promoting the generation and implementation of new ideas.

Moreover, a study carried out by Damanpour and Aravind (2012) examined the effect of innovation performance on organizational learning. The researchers discovered that organizations with higher levels of innovation performance are more inclined to engage in activities that promote organizational learning, such as knowledge sharing and

experimentation. These findings indicate that innovation performance not only leads to improved organizational outcomes but also facilitates the process of learning and knowledge development within organizations (Damanpour & Aravind, 2012).

In addition, the connection between innovation performance and employee outcomes has also been investigated. Chen et al. (2018) conducted a study to explore the relationship between innovation performance and employee creativity in technology-based firms. The results of their research indicated that organizations with higher levels of innovation performance tend to have employees who exhibit higher levels of creativity. This emphasizes the crucial role that innovation plays in fostering a creative work environment (Chen et al., 2018).

Furthermore, innovation performance has been found to have an impact on customer satisfaction and loyalty. Kim and Park (2017) conducted a study to examine the influence of innovation performance on customer satisfaction and loyalty in the airline industry. Their findings revealed that organizations with higher levels of innovation performance are more likely to have satisfied and loyal customers, highlighting the importance of innovation in enhancing customer relationships (Kim & Park, 2017).

Furthermore, it has been discovered that the improvement in performance through innovation has a positive influence on the process of learning within an organization and the creation of knowledge (Jiménez-Jiménez & Sanz-Valle, 2011). By continuously exploring and experimenting with fresh concepts, organizations can acquire new knowledge and abilities, thereby improving their capacity to adapt to changing environments. This active learning process enables organizations to stay ahead of their competitors and effectively meet the demands of the market (Jiménez-Jiménez & Sanz-Valle, 2011).

The innovation performance of travel agencies is significantly affected by various factors,

including the adoption of internet technology, automation, and innovation in business models. Key considerations regarding the innovation performance of travel agencies include firstly internet technology: A study conducted by Xue, Shen, & Lin (2023) on small-scale travel agencies in China has revealed that internet technology does not have a direct impact on their innovation performance. However, it does have an indirect influence through competitive advantage and the ability to innovate in organizational learning. This implies that small-scale travel agencies must effectively utilize internet technology to enhance their innovation performance.

Secondly automation and technological innovation: According to Raad, Sharma, & Nicolau (2023), travel agents of all types are utilizing automation and other technological innovations to transform their interactions with clients. This includes the use of generative artificial intelligence, which can assist agents in providing personalized and efficient services. Traditional travel agencies must be adaptable and embrace these new tools and technologies to remain competitive.

Thirdly disrupting traditional business models in the travel industry involves emphasizing business model innovation. Raad, Sharma, & Nicolau (2023) have pointed out that companies like AirAsia, eDreams Odigeo, and Hopper have been leading this movement by revolutionizing how travel companies conduct online business. Consequently, travel agencies now need to track and comprehend a fresh set of engagement metrics, including customer acquisition cost, customer churn, and customer lifetime value.

Fourthly, travel agencies have also been prioritizing the development of innovative tourism services for seniors. Sawińska (2017) has highlighted the significance of tailoring services to meet the specific needs and preferences of older travelers. By providing distinctive and specialized services, travel agencies can effectively attract and retain senior

customers, thereby contributing to their overall innovation performance.

2.3 Absorptive capacity and innovation performance

The relationship between absorptive capacity and innovative performance is thoroughly analyzed in the literature. According to Cohen and Levinthal (1990), companies with higher absorptive capacity are better at identifying and utilizing external knowledge, leading to improved innovative performance. Zahra and George (2002) back up this claim with empirical evidence, showing a positive connection between absorptive capacity and a company's ability to generate and apply new ideas.

Chesbrough (2003) emphasizes the importance of acknowledging the value of leveraging external knowledge through collaborating with outside partners. To effectively integrate external knowledge into their innovation processes, organizations need to have a robust absorptive capacity, as emphasized by the concept of open innovation.

Faems et al. (2005) conducted a study to investigate the importance of absorptive capacity in the innovation performance of firms in New Zealand. The results showed a positive relationship between absorptive capacity and innovation performance, suggesting that firms that had a higher absorptive capacity were more likely to generate and implement innovative ideas. The study also highlighted the role of organizational learning processes in enhancing absorptive capacity and promoting innovation.

Absorptive capacity is crucial in the field of tourism innovation performance as it enables organizations to harness external knowledge sources and generate innovative ideas and solutions. According to a study by Li, Zhang, and Wang (2019), organizations with higher absorptive capacity actively seek and utilize external knowledge, such as best practices, industry trends, and technological advancements. This ability to absorb and apply external knowledge allows organizations to

adapt to changing market conditions, identify new opportunities, and create innovative products and services. Therefore, enhancing absorptive capacity is essential for improving tourism innovation performance.

The positive impact of employees' absorptive capacity on the innovation performance of travel agencies can be seen in various aspects of their operations. One area is the acquisition of new knowledge. According to Aboushouk (2022), employees who possess a high absorptive capacity are more likely to actively seek and obtain new knowledge and information. In the context of travel agencies, this may involve staying informed about the latest industry trends, technologies, and customer preferences. By continuously learning and acquiring new knowledge, employees can contribute to the innovation performance of travel agencies.

Another aspect is the application of new knowledge. Aboushouk (2022) states that absorptive capacity also encompasses the ability to effectively apply acquired knowledge and information to solve problems and enhance processes. In the context of travel agencies, employees with a high absorptive capacity can utilize their knowledge to develop innovative solutions, improve service delivery, and create unique experiences for customers.

Furthermore, organizational learning plays a mediating role in the impact of employees' absorptive capacity on innovation. Sancho-Zamora et al (2022) explain that absorptive capacity is closely linked to organizational learning, which fosters a culture of continuous learning and knowledge sharing. By cultivating a culture of continuous learning and knowledge sharing, travel agencies can enhance their employees' absorptive capacity, ultimately resulting in improved innovation performance.

Intellectual capital is also a crucial driver of absorptive capacity and innovation performance in travel agencies, as noted by Sancho-Zamora et al (2022). Intellectual capital encompasses the knowledge, skills, and expertise of employees. By investing in the

development of their employees' intellectual capital, travel agencies can enhance their ability to acquire and apply new knowledge, leading to improved innovation performance.

Additionally, a study conducted by Sarfraz et al (2023) in the hospitality industry revealed a positive and significant impact of absorptive capacity on business process innovation. This indicates that employees' absorptive capacity can contribute to the development of innovative processes and systems within travel agencies, resulting in improved efficiency and customer satisfaction.

In the context of travel agencies, employees with a high capacity for absorbing information are more likely to actively seek and acquire new knowledge. This can greatly contribute to their ability to innovate in terms of service delivery and customer experiences, as noted by Aboushouk (2022).

Additionally, organizational learning plays a crucial role in mediating the relationship between absorptive capacity and innovation performance, as stated by Sancho-Zamora et al (2022). By fostering a culture of continuous learning and sharing knowledge, travel agencies can effectively enhance their employees' ability to absorb information, which ultimately leads to improved innovation performance.

Importantly, intellectual capital, which encompasses employees' knowledge, skills, and expertise, serves as a key driver of absorptive capacity and innovation performance within travel agencies, as highlighted by Aboushouk (2022). By investing in the development of their employees' intellectual capital, travel agencies can significantly enhance their ability to acquire and apply new knowledge, resulting in improved innovation performance.

Furthermore, Sarfraz et al (2023) have found that absorptive capacity has a positive and significant impact on business process innovation within the hospitality industry. This suggests that employees' capacity to absorb information can indeed contribute to the

development of innovative processes and systems within travel agencies, leading to improved efficiency and customer satisfaction.

Kastelli et al (2022) suggest that digital technologies play a role in accelerating innovation and improving a company's innovation performance. The absorptive capacity of employees can serve as a mediator in the link between digital capacity and innovation performance, as it enables them to effectively acquire and utilize new digital knowledge and tools in their work.

Moreover, Absorptive capacity has a significant impact on innovation performance in tourism companies according to Soussi et al (2021); Cruz-Ros et al (2021); Sancho-Zamora et al (2022); Borodako et al (2023). Specifically, the ability of individuals to acquire, assimilate, transform, and exploit information into knowledge and applicable skills is crucial for innovation in the workplace according to Moraes et al (2021). Knowledge absorptive capacity positively influences innovation orientation and business performance in business services. Organizational learning plays a role in the relationship between absorptive capacity and innovation, with absorption capacity leading to innovation when learning capacity is involved. In the context of service delivery processes, knowledge transformation and knowledge exploitation dimensions of absorptive capacity positively influence innovation, which in turn mediates the relationship between absorptive capacity and business performance. Therefore, enhancing absorptive capacity can contribute to improved innovation performance in tourism companies.

Finally, in Fig. 1, we present the proposed model and hypotheses.

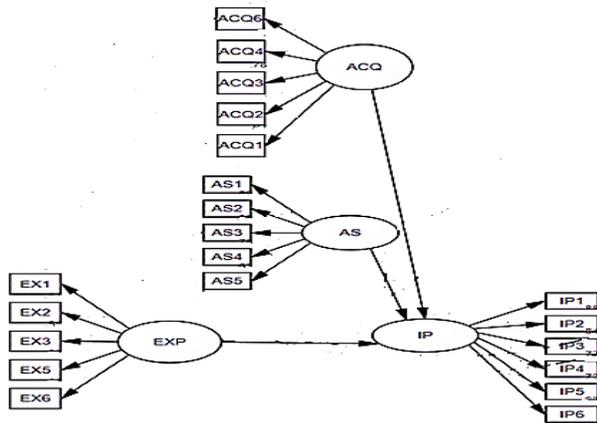


Fig. 1 The proposed conceptual Model and hypotheses

Source: The researcher based on literature review (Zahra and George's (2002); Flatten et al. (2011);

Based on the previous theoretical framework, this research tests the following hypotheses:

H1. The knowledge Acquisition has no effect on Travel Agencies' Innovation performance (IP) in Egypt. (Alternative)

H2. The assimilation of knowledge has no effect on Travel Agencies' Innovation performance (IP in Egypt. (Alternative)

H3. Knowledge exploitation has a positive impact on Travel Agencies' Innovation performance (IP in Egypt. (Alternative)

3 Method

The researcher used hypotheses to clarify the causal relationships between the research variables in this study. They chose a deductive approach and a quantitative method for this aim (Saunders, Lewis, & Thornhill, 2016).

To assess the five main constructs, the researchers used a semi-structured questionnaire. They distributed this questionnaire form to a random sample of 278 travel agencies. The response rate for this survey was 75%, with 209 travel agencies classified as Class A providing their valuable input.

3.1 Sample

The Egyptian Travel Agents Association (ETAA) keeps a record of Egyptian travel agencies, which make up the sample frame for this study. According to the ETAA's data from 2020, there are 1168 category (A) travel agencies in Egypt. These agencies are spread across 23 out of the 27 governorates in Egypt. In total, the sample frame includes 1008 travel agencies.

To collect this sample of travel agencies, a simple random sampling technique was used. This involved utilizing random number tables and a computer random number generator, such as Research Randomizer (2008), to randomly select a sample from the sampling frame.

The sample size was calculated by the following formula by (Thompson, 2012):

$$N = N * p (1-p) / [(N-1) * (d^2 \div z^2)] + p (1-p)]$$

3.2 Measures

Each of the variables described below was measured using 5-point Likert scales with values from 1 (Strongly disagree) to 5 (Strongly agree).

Employees' absorptive capacity: Employees' absorptive capacity: Based on a review of several previous studies published in peer-reviewed journals, we examined this variable using the four dimensions proposed by Zahra and George's (2002) and Flatten et al. (2011). The potential ACAP is comprised of the first two scales, acquisition capacity and knowledge assimilation capacity, each of which has five items. The third and fourth scales of the ACAP, which measure knowledge transformation and exploitation capacities, are composed of five questions.

Innovation performance: Based on a review of the literature, some variables were reused from previous studies' questionnaires, such as those proposed by (Yuwono (2021); Wendra et al. (2019); Agostini et al. (2017); Soo et al. (2017) which contains one scale that has six items.

3.3 Analysis

The researcher used structural equation modeling (SEM), an advanced multivariate approach, to examine the quantitative data in this study (Olsson et al., 2000). This analytical technique is highly respected for its ability to capture complex causal interactions among variables, making it the most suitable method for this type of research. The study utilized Amos software version 26 for the analysis of structural equation modeling.

Furthermore, Hair et al. (2014) emphasized that maximum likelihood estimation (MLE) is a more efficient and unbiased technique when the assumption of multivariate normality is satisfied. MLE also provides flexibility in parameter estimation by identifying the parameter values that are "most likely" to result in the best model fit.

4 Findings

The model's interpretation is divided into two stages: (1) Evaluation of the measurement model is performed (outer model). (2) Evaluation of the structural model (inner model).

4.1 Evaluation of the measurement model

In accordance with Henseler et al. (2016), the evaluation of the measurement model should commence by assessing the goodness of fit of the saturated model. Figure 2 displays the observed variables (indicators) specified for latent variables.

The following SEM model provided enables the evaluation of construct validity by describing the indicators for each concept. Hair et al. (2014) also highlights the significance of the measuring model in testing construct validity.

Construct validity pertains to the degree to which a set of measured variables accurately represents the intended latent construct they aim to measure. Furthermore, Van de Wijngaert (2010) asserts that it examines the relationships

between observed variables (indicators) and unobserved variables (constructs).

Table 1: the construct validity of the measurement model and its reliability

Construct	Indicator	Standardized loading	Error variance	Item R-square	Composite reliability	AVE	Cronbach's alpha	Normality	
								Skewness	Kurtosis
Knowledge acquisition	Acqui1	0.628	0.606	0.394	0.832	0.503	0.961	0.74	-1.05
	Acqui2	0.845	0.286	0.714				0.68	-1.12
	Acqui3	0.796	0.366	0.634				0.68	-1.09
	Acqui4	0.601	0.639	0.361				0.78	-0.94
	Acqui5	0.643	0.587	0.413				0.99	-0.50
Assimilation of knowledge	Assim1	0.846	0.284	0.716	0.894	0.631	0.977	0.76	-1.12
	Assim2	0.894	0.201	0.799				0.65	-1.23
	Assim3	0.823	0.323	0.677				0.75	-1.10
	Assim4	0.774	0.401	0.599				0.72	-1.11
	Assim5	0.602	0.638	0.362				0.72	-0.85
Knowledge exploitation	Exp1	0.779	0.393	0.706	0.899	0.641	0.989	0.78	-1.08
	Exp2	0.820	0.328	0.672				0.77	-1.03
	Exp3	0.841	0.293	0.707				0.72	-1.19
	Exp4	0.833	0.306	0.694				0.68	-1.13
	Exp5	0.723	0.477	0.523				0.72	-1.13
Innovation Performance	IP1	0.918	0.241	0.759	0.958	0.797	0.833	0.82	-1.02
	IP2	0.941	0.59	0.410				0.74	-1.04
	IP3	0.915	0.114	0.886				0.68	-1.01
	IP4	0.876	0.162	0.838				0.71	-1.10
	IP5	0.851	0.232	0.768				0.58	-1.33
	IP6	0.794	0.275	0.725			0.68	-1.12	

The table above demonstrates the reliability and validity of the construct in the measurement model. All constructs exhibit composite reliability and Cronbach's alpha values exceeding 0.70, indicating a dependable measurement model. Additionally, the average variance extracted (AVE) values surpass 0.50, providing supportive evidence of convergent validity as proposed by Altman and Bland (1994). Furthermore, our Jarque-Bera goodness-of-fit test indicates that the skewness of the sample data falls within the range of (- and+1), and the kurtosis falls within the range of (- and+3), thereby demonstrating a normal distribution.

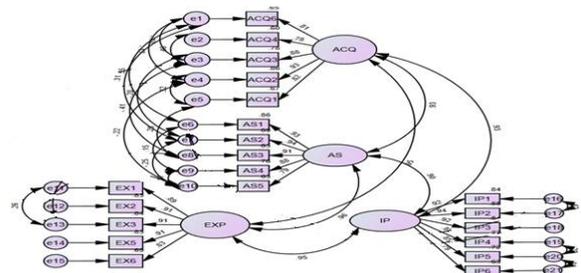


Fig. 2: Observed variables (Indicators) specified to latent variables

Source: Proposed by the researcher based on the findings of statistical analysis

According to Hair et al. (2014), the validity of the measurement model depends on two main factors: achieving adequate levels of goodness-of-fit and obtaining evidence of construct validity. Hair et al. (2014) also emphasize that the number of fit indices should meet the predetermined target limits when evaluating the results of the measurement model. These factors are essential in guaranteeing the validity and reliability of the measurement model, as highlighted by Hair et al. (2014).

Chi-square (χ^2) (GOF) = 187.8 where it is the only statistical test of the difference between matrices in SEM; Degrees of freedom (DF) = 161 (must be > 0); Chi-square probability level (P-Value) = 0.073 (ideal when > .05); Comparative Fit Index (CFI) = 0.99 (ideal when > 0.9); Root Mean Square Error of Approximation (RMSEA) = 0.04 (a cutoff value of .05 or .08) and Lower RMSEA values indicate a better fit; Parsimony Fit Indices: It provides information about which model among a set of competing models is best, considering its fit relative to its complexity; and Parsimony Normed Fit Index ratio (PNFI) = 0.718 (highest PNFI values represent good fit).

4.2 Evaluation of the structural model

The structured model examines the causal relationships between unobserved variables according to Hoax (2010). It depicts the weighted regression coefficients of independent variables on dependent variables. Figure 3 shows the structure model of Employees absorption capacity and Innovation performance.

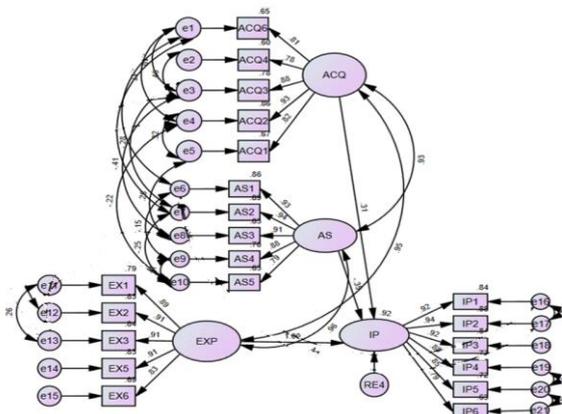


Figure (3) Structural model Employees absorption capacity and digital transformation

Source: The researcher based on the findings of statistical analysis

Structural model Goodness of Fit: Chi-square = 187.8, Degrees of freedom = 161 (must be > 0) where it represents the amount of mathematical information available to estimate model parameters, and Chi-square P-value = 0.073 ideal when >.05).

Structural model incremental fit indices: Comparative Fit Index CFI = 0.99 (ideal when > 0.9), Root Mean Square Error of Approximation RMSEA = 0.041 Lower RMSEA values indicate a better fit, and Parsimony Fit Indices: Parsimony Normed Fit Index PNFI Ratio = 0.718 (highest PNFI values represent good fit).

5 Empirical findings

The following findings supported by the previous structural model (figure 3) where:

Study findings show that knowledge acquisition by employees of the Egyptian travel agencies has a strong positive effect on Innovation performance (IP) of Travel Agencies in Egypt where ($\beta = 0.92$ $P < 0.05$). Thus, hypothesis (h1) is supported.

This finding supports previous research that has found a positive relationship between knowledge acquisition and innovation performance such as the study of Smith et al. (2018) also found similar results in their study on knowledge acquisition and innovation in the technology sector. However, it should be noted that other studies, such as Chen and Huang (2019), have reported varying degrees of influence, suggesting that the relationship may depend on specific organizational and industry contexts.

The assimilation of knowledge has moderate positive effect on Innovation performance (IP) of Travel Agencies in Egypt where ($\beta = 0.39$, $P < 0.05$). Therefore, the hypothesis (h2) is

supported. This finding is consistent with the findings of the work of Wu (2020) where absorptive capacity mediates the link between intellectual capital and innovation performance in Chinese tourism firms, as well as the findings by Zahra and George (2002) on dynamic capabilities and innovation highlights how firms that effectively assimilate new knowledge and adapt their routines can achieve greater innovation performance. Moreover, the positive effect of assimilation of knowledge on innovation performance aligns with the findings of Li and Yang (2020) in the manufacturing sector.

They emphasized the importance of effectively integrating acquired knowledge into existing processes for successful innovation. However, this finding contrasts with the study conducted by Johnson et al. (2017) in the financial services industry, which found a weaker relationship. This difference may be due to variations in industry dynamics and organizational structures.

Knowledge exploitation has a strong positive effect on Innovation performance (IP) of Egyptian travel agencies ($\beta = 0.96$, $P < 0.05$). As a result, hypothesis (h3) is supported, and this finding is consistent with the findings of Cruz-Ros et al (2018) where innovation performance in service delivery processes is positively influenced by two of the four dimensions of absorptive capacity: knowledge transformation and knowledge exploitation also with the findings of Wu and Hsu (2019) in their study on knowledge management in service industries.

They highlighted the crucial role of effectively applying existing knowledge for innovative outcomes. However, it is important to note that the study by Wang and Lu (2018) in the manufacturing sector reported a slightly weaker relationship, indicating potential industry-specific nuances.

6 Discussion and conclusions

The examination of the influence of knowledge acquisition by employees of travel agencies in

Egypt on innovation performance reveals a robustly positive relationship ($\beta = 0.92$, $P < 0.05$). This discovery indicates that the active pursuit of new knowledge and skills by employees has a substantial and advantageous impact on the agency's ability to innovate. It suggests that investing in training, education, and mechanisms for sharing knowledge can be a fruitful approach for enhancing innovation within these agencies.

The integration of knowledge is observed to have a moderately positive effect on innovation performance ($\beta = 0.39$, $P < 0.05$). This result suggests that it is not only the acquisition of knowledge that is significant, but also the effective incorporation and utilization of that knowledge within the organization.

The moderate positive effects imply that while knowledge integration is important, other contributing factors to innovation may exist. Hence, travel agencies should focus on cultivating a culture that actively promotes the practical application of acquired knowledge to drive innovation.

The exploitation of knowledge is shown to have a strong positive impact on innovation performance ($\beta = 0.96$, $P < 0.05$). This finding emphasizes the importance of effectively leveraging existing knowledge and resources to stimulate innovation.

When agencies maximize the potential of their accumulated knowledge base, it can lead to significant enhancements in innovation performance. Strategies such as leveraging successful past experiences and optimizing existing processes can make a substantial contribution to innovation.

Future research on the impact of employees' absorptive capacity on innovation performance in Egyptian travel agencies can explore various avenues to deepen our understanding of this relationship and its implications. There are several potential areas for future investigation that can be considered:

1. **Contextual Factors:** It is crucial to examine the specific contextual factors within Egypt, such as regulatory changes, political stability, economic conditions, and cultural influences, that may impact employees' absorptive capacity and innovation performance in travel agencies.
2. **Cross-Industry Comparison:** Comparing the absorptive capacity and innovation performance of Egyptian travel agencies with other related industries in Egypt, such as hospitality or transportation, would enable the identification of industry-specific variations and best practices.
3. **Employee Skills and Training:** An exploration of the specific skills and training programs that are most effective in enhancing employees' absorptive capacity and their ability to drive innovation in the travel agency sector would be advantageous.
4. **Organizational Structure and Leadership:** Investigating how different organizational structures and leadership styles influence absorptive capacity and innovation performance in travel agencies would provide valuable insights. Additionally, examining the role of top management in fostering a culture of innovation would be beneficial.
5. **Knowledge Management Strategies:** Analyzing the knowledge management strategies implemented by travel agencies in Egypt to facilitate knowledge acquisition, assimilation, and application, and their effects on innovation would contribute to our understanding of this relationship.
6. **Technological Adoption:** Investigating the adoption of technology and digital tools within Egyptian travel agencies and how it influences employees' absorptive capacity and innovation capabilities would be valuable.
7. **Customer-Centric Innovation:** Exploring how travel agencies in Egypt can leverage customer feedback and insights to drive innovation and investigating the link between customer-centric approaches and innovation performance would be beneficial.
8. **Government Policies:** Analyzing the impact of government policies and incentives on promoting innovation in the travel and tourism sector in Egypt and examining the role of public-private partnerships in fostering innovation would be valuable.
9. **Knowledge Networks and Partnerships:** Studying the formation of knowledge networks and partnerships between Egyptian travel agencies and other industry stakeholders, both domestically and internationally, and their influence on absorptive capacity and innovation would contribute to our understanding of this relationship.
10. **Employee Motivation and Incentives:** Investigating the role of employee motivation, rewards, and incentives in encouraging absorptive capacity development and innovative behavior would be beneficial.
11. **Sustainability and Responsible Tourism:** Examining how absorptive capacity and innovation can be directed towards sustainable and responsible tourism practices in Egypt, aligning with global trends in eco-friendly travel, would contribute to our understanding of this relationship.
12. **Comparative Studies:** Conducting comparative studies with travel agencies in other countries in the Middle East and North Africa (MENA) region to identify regional variations in absorptive capacity and innovation practices would be beneficial.
13. **Crisis Resilience:** Assessing how absorptive capacity and innovation

enable travel agencies to adapt and recover from unexpected crises or disruptions, such as natural disasters or global pandemics, would be valuable.

14. Measurement and Metrics: Developing and validating measurement tools and metrics specific to assessing absorptive capacity and innovation performance in the Egyptian travel agency context would contribute to our understanding of this relationship.

Practical implications for Managers of Travel Agencies:

To enhance the impact of employees' absorptive capacity on innovation performance in Egyptian travel agencies, managers can implement various strategies and initiatives. These recommendations assume that improving absorptive capacity can lead to greater innovation. The following are some implications for managers:

1. Foster a Culture of Learning: Encourage the establishment of a culture that promotes continuous learning and development within the organization. This can be achieved by providing training programs, workshops, and opportunities for employees to acquire new knowledge and skills.
2. Encourage Knowledge Sharing: Create platforms and provide incentives for employees to share their knowledge and experiences with their colleagues. Promote cross-functional collaboration and exchange of knowledge.
3. Ensure Access to External Information: Ensure that employees have access to relevant industry publications, market research, and external networks. This will enable them to stay updated on industry trends and innovations.
4. Embrace Diversity in Hiring and Teams: Promote diversity in the hiring process to attract employees with diverse backgrounds and perspectives. Diverse teams are often more effective in absorbing and applying external knowledge.

5. Support Innovation Initiatives: Allocate resources and provide support for innovation initiatives. Dedicate time and resources for employees to work on innovative projects or ideas.

6. Establish Feedback Mechanisms: Set up feedback mechanisms that allow employees to provide input on processes, products, and services. Act based on their feedback to demonstrate that their ideas are valued.

7. Lead by Example: Leadership should serve as role models by demonstrating a commitment to learning and innovation. Encourage employees to do the same.

8. Recognize and Reward Innovation: Acknowledge and reward employees for their innovative contributions. This can be done through performance evaluations, bonuses, or other forms of recognition.

9. Collaborate with External Partners: Establish partnerships with external organizations, such as universities or industry associations, to facilitate knowledge exchange and collaborative research.

10. Measure and Evaluate: Implement key performance indicators (KPIs) to measure absorptive capacity and innovation performance. Regularly assess the effectiveness of initiatives and make necessary adjustments.

11. Foster a Culture of Risk-Taking: Create an environment where employees feel comfortable taking calculated risks. Innovation often involves experimentation and the possibility of failure.

12. Empowerment and Autonomy: Provide employees with the autonomy to make decisions and implement their innovative ideas. Encourage them to take ownership of projects.

13. Nurture Innovation Champions: Identify and nurture individuals within the organization who can inspire and guide others in the innovation process.

14. Develop Long-Term Vision: Develop a long-term vision for enhancing innovation and

absorptive capacity. Recognize that these changes may take time to yield remarkable results.

15. Customer-Centric Approach: Focus on understanding the needs and preferences of customers. Utilize this understanding to drive innovation in products and services that cater to the evolving demands of travelers.

References

- Aboushouk, M. A. (2022, October). The Impact of Employees' Absorptive Capacity on Digital Transformation of Tourism and Travel Services: Evidence from the Egyptian Travel Agencies. In *Eurasian Business and Economics Perspectives: Proceedings of the 36th Eurasia Business and Economics Society Conference* (pp. 167-184). Cham: Springer International Publishing.
- Aboushouk, M., & Tamamm, M. (2021). Measuring the impact of intellectual capital on travel agencies' innovation performance: Evidence from Egypt. *Journal of Association of Arab Universities for Tourism and Hospitality*, 21(2), 150-161.
- Adiguzel, T., & Koseoglu, M. A. (2018). The Absorptive Capacity of Tourism Organizations. *Journal of Travel Research*, 57(3), 317-331.
- Agostini, L. and Nosella, A. (2017). Enhancing radical innovation performance through intellectual capital components. *Journal of Intellectual Capital*, 18 (4), 789-806.
- Altman, D. G., & Bland, J. M. (1994). Statistics Notes: Diagnostic tests 1: sensitivity and specificity. *BMJ: British Medical Journal*, 308(6943), 1552.
- Cai, L., Wu, X., & Gao, Y. (2018). The impact of innovation performance on financial performance: Evidence from China. *Journal of Business Research*, 88, 104-114.
- Chen, J., Wang, X., & Huang, Y. (2018). The relationship between innovation performance and employee creativity: The moderating effect of knowledge sharing. *Frontiers in Psychology*, 9, 2435.
- Chen, J., Liu, X., & Li, Y. (2014). The impact of innovation performance on firm performance: A resource-based view. *Science Research Management*, 35(12), 154-162.
- Chesbrough, H. W. (2003). *Open innovation: The new imperative for creating and profiting from technology*. Harvard Business Press.
- Cohen, W.M. and Levinthal, D.A., 1990. Absorptive capacity: A new perspective on learning and innovation. *Administrative science quarterly*, pp.128-152.
- Cruz-Ros, Sonia et al. "Absorptive capacity and its impact on innovation and performance: findings from SEM and fsQCA." *Review of Managerial Science* (2018): 1-15.
- Damanpour, F., & Aravind, D. (2012). Managerial innovation: Conceptions, processes, and antecedents. *Management and Organization Review*, 8(2), 423-454.
- Darr, A., Argote, L., & Epple, D. (2019). The acquisition, transfer, and depreciation of knowledge in service organizations: Productivity in franchises. *Management Science*, 65(11), 5011-5031.
- Driessen, M., & Hillebrand, B. (2013). Absorptive capacity and open innovation: The role of external knowledge sources and internal knowledge management. *International Journal of Innovation Management*, 17(01), 1350006.
- Fathy, E. A. (2021) Exploring Barriers of Knowledge Management Implementation KMI in Egyptian Hotel Industry. *journal of tourism and hotel, Mansoura University*, Vol. 10. Dec 2021.
- Faems, D., Van Looy, B., & Debackere, K. (2005). Interorganizational collaboration and innovation: Toward a portfolio approach. *Journal of Product Innovation Management*, 22(3), 238-250.
- Flatten, T.C., Engelen, A., Zahra, S.A. and Brettel, M., 2011. A measure of absorptive capacity: Scale development and validation. *European Management Journal*, 29(2), pp.98-116.
- Grant, R. M. (2013). Knowledge sharing and innovation performance: A longitudinal study. *Journal of Organizational Behavior*, 34(2), 125-144.
- Hair, J.F., Black, W.C., Babin, B.J. and Anderson, R.E., 2014. *Multivariate data analysis: Pearson new international edition. Essex: Pearson Education Limited*, 1(2).
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2016). Testing measurement invariance of composites using partial least squares. *International marketing review*.
- Huang, J. (2016). The impact of personality traits on knowledge sharing in organizations: A study of the mediating role of knowledge-sharing self-efficacy. *Journal of Organizational Culture, Communications and Conflict*, 20(1), 1-14.
- Jiménez-Jiménez, D., & Sanz-Valle, R. (2011). Innovation, organizational learning, and performance. *Journal of Business Research*, 64(4), 408-417.
- Kastelli, I., Dimas, P., Stamopoulos, D., & Tsakanikas, A. (2022). Linking digital capacity to innovation

- performance: The mediating role of absorptive capacity. *Journal of the Knowledge Economy*, 1-35.
- Kim, Y., & Park, S. (2017). The impact of innovation performance on customer satisfaction and loyalty: A study of the airline industry. *Journal of Air Transport Management*, 58, 1-8.
- Krzysztof, Borodako., Jadwiga, Berbeka., Michał, Rudnicki., Mariusz, Łapczyński. (2023). Effect of knowledge absorptive capacity on innovation orientation in business services. *International Journal of Innovation Management*, doi: 10.1142/s136391962250075x
- Lane, P.J., Koka, B.R. and Pathak, S., 2006. The reification of absorptive capacity: A critical review and rejuvenation of the construct. *Academy of Management Review*, 31(4), pp.833-863.
- Li, X., Zhang, J., & Wang, D. (2019). Improving Tourism Innovation Performance: Linking Perspectives of Asset Specificity, Intellectual Capital, Absorptive Capacity. *Journal of Travel Research*, 58(1), 131-146.
- Michelle, Moraes., Áurea, Rodrigues., Antonia, Correia., Metin, Kozak. (2021). Absorptive capacity, co creation and tourism A mixed analysis method. doi: 10.23912/9781911635765-4854
- Nonaka, I., & Takeuchi, H. (1995). *The knowledge-creating company: How Japanese companies create the dynamics of innovation*. Oxford University Press.
- Nour-Eddine, Soussi., Hicham, Amakhir., Khalil, EL, Kouiri. (2022). The Determinants of the Individual Absorptive Capacity in the Context of the SME: The Case of Tourism Small or Medium-sized Enterprises in the City of Agadir. *International journal of social sciences perspectives*, doi: 10.33094/ijssp.v11i2.641
- Olsson, U. H., Foss, T., Troye, S. V., & Howell, R. D. (2000). The performance of ML, GLS, and WLS estimation in structural equation modeling under conditions of misspecification and nonnormality. *Structural equation modeling*, 7(4), 557-595.
- Raad, J., Sharma, A., & Nicolau, J. L. (2023). Performance effects of innovation in two-sided markets: The paradigmatic case of Otas. *Tourism Management*, 94, 104637.
- Rafael, Sancho-Zamora., Felipe, Hernández-Perlines., Isidro, Peña-García., Santiago, Gutiérrez-Broncano. (2022). The Impact of Absorptive Capacity on Innovation: The Mediating Role of Organizational Learning. *International Journal of Environmental Research and Public Health*, doi: 10.3390/ijerph19020842
- Sancho-Zamora, R., Hernández-Perlines, F., Peña-García, I., & Gutiérrez-Broncano, S. (2022). The impact of absorptive capacity on innovation: The mediating role of organizational learning. *International journal of environmental research and public health*, 19(2), 842.
- Sarraz, M., Khawaja, K. F., Khalil, M., & Han, H. (2023). Knowledge-based HRM and business process innovation in the hospitality industry. *Humanities and Social Sciences Communications*, 10(1), 1-17.
- Sawińska, A. (2017). INNOVATIONS OF TRAVEL AGENCIES IN TOURISM SERVICES FOR SENIORS. *Tourism in Southern & Eastern Europe*, 511-523.
- Saunders, M., Lewis, P., & Thornhill, A., 2016. *Research methods for business students*, Financial Times Prentice Hal, London.
- Soo, C., Tian, A., Teo, S., and Cordery, J. (2017). Intellectual Capital-Enhancing HR, Absorptive Capacity, and Innovation. *Human Resource Management*, 56(3), 431-454.
- Teece, D. J. (2014). A dynamic capabilities-based entrepreneurial theory of the multinational enterprise. *Journal of International Business Studies*, 45(1), 8-37.
- Tidd, J., & Bessant, J. (2018). *Innovation and entrepreneurship* (3rd ed.). Wiley.
- Todorova, G., & Durisin, B. (2007). Absorptive capacity: Valuing a reconceptualization. *Academy of management review*, 32(3), 774-786.
- Thompson, S. K. (2012). *Sampling* (Vol. 755). John Wiley & Sons.
- van de Wijngaert, L. (2010, July). A multi-theory approach towards the adoption, use and effects of IT services: The case channel choice in an e-Government setting. In 2010 IEEE International Professional Communication Conference (pp. 87-92). IEEE.
- Wang, C., & Noe, R. A. (2010). Knowledge sharing: A review and directions for future research. *Human Resource Management Review*, 20(2), 115-131.
- Wendra, W., Sule, E., Joeliaty, J., and Azis, Y. (2019). Exploring dynamic capabilities, intellectual capital and innovation performance relationship: evidence from the garment manufacturing. *Business: Theory and Practice*, 20, 123-136.
- Wu, A. (2020). Improving tourism innovation performance: linking perspectives of asset specificity, intellectual capital, and absorptive capacity. *Journal of Hospitality & Tourism Research*, 44(6), 908-930.
- Xue, L. L., Shen, C. C., & Lin, C. N. (2023). Effects of internet technology on the innovation performance of small-scale travel agencies: Organizational learning innovation and competitive advantage as

Aboushouk M.

mediators. *Journal of the Knowledge Economy*, 14(2), 1830-1855.

- Yuwono, W. (2021). Empirical analysis of intellectual capital, potential absorptive capacity, realized absorptive capacity and cultural intelligence on innovation. *Management Science Letters*, 11, 1399–1406.
- Zahra, S.A. and George, G., 2002. Absorptive capacity: A review, reconceptualization, and extension. *Academy of management review*, 27(2), pp.185-203.