



**The influence of IT Awareness and IT Infrastructure on the adoption of  
E- marketing among Small and Medium Enterprises in Jordan**

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**Abstract**

The aim of this research article is to examine the influence of IT awareness and IT infrastructure on the adoption of e-marketing amongst small and medium-sized enterprises (SMEs) in Jordan. A cross-sectional survey research design was used to collect data from 300 SMEs in Jordan. The survey collected data on SMEs' IT awareness, IT infrastructure, and e-marketing adoption and data were analysed using PLS-SEM. The results of the study revealed that IT awareness and IT infrastructure significantly influenced the adoption of e-marketing among SMEs in Jordan. The study also found that the size of the SMEs had a significant effect on e-marketing adoption, with larger SMEs being more likely to adopt e-marketing compared to smaller SMEs. The findings of the study provide insights into how SMEs can improve their competitiveness in the market by investing in IT infrastructure and providing IT training to their employees to increase their IT awareness.

**Keywords:** IT awareness, IT infrastructure, e-marketing, small and medium enterprises, Jordan.

**Introduction**

The global market is increasingly competitive, and small and medium-sized enterprises (SMEs) face significant challenges in establishing their presence and expanding their customer base. E-marketing has emerged as a powerful tool for SMEs to reach a wider audience and increase their

sales. Over the last two decades, the internet has opened up many opportunities for businesses to thrive. One area where it has had a significant impact is in marketing, which has helped companies to reach new customers and improve their inclusion in the business environment. E-marketing, according to Bothma & Burgess, (2011), refers to the use of electronic devices to provide goods and services to satisfy purchaser needs. Similarly, Iddris and Ibrahim, (2015), describe “e-marketing” as a process that combines “electronic communication technology” and “traditional marketing” to distribute goods and services to meet customer desires. In summary, E-marketing is the utilization of internet and associated information technologies to accomplish marketing goals. Many marketing companies have adopted e-marketing by integrating it into their business processes. SMEs in developing countries contribute significantly to the economy and employment (Coke-Hamilton, 2021), and e-marketing has played a significant role in creating a conducive business environment, enhancing the quality of goods and services, and facilitating the penetration of new customers and supplies through new channels of product distribution, according to existing literature (Nguyen, & Pham, 2011).

Scholars have identified several factors that influence the embracing of innovative technologies such as “e-marketing”. According to the Technological Frame of Reference (TFR) theory, the kind of technology used, technical approach, and the technology employed play a significant role in deciding the uptake of information technology (IT) such as social media marketing and e-payment methods. Moreover, the Technology Acceptance Model (TAM) has recognized the perceived usefulness and ease of use as crucial determinants in the adoption of IT by small and medium-sized enterprises (SMEs). Additionally, the availability of proficient IT personnel and a practical budget are essential factors that affect IT adoption (Nkosana & Skinner, 2016). However, few studies have investigated the adoption of e-marketing among SMEs (Chong, Man, & Kim, 2018; Odimmega, Udegbonam, Ile, & Azu, 2016). The limited use of e-marketing technology in small and medium-sized enterprises (SMEs) is concerning, despite its importance (Chube, 2015; Eze, Ayigbe, Eberachi, & Jordan, 2015; Eze, & Obikeze, 2017; Wilson, & Makau, 2018). The low rate of adoption may be attributable to the new and inventive nature of the technology, along with a deficiency of understanding regarding its implementation in

developing nations. This is a worrying indication for small and medium-sized enterprises (SMEs) (Sheikh, Shahzad, & Ishak, 2016). Research on the adoption of e-marketing among SMEs has produced mixed results, making it difficult to determine the exact factors influencing its adoption. According to Mugobi and Mlozi (2020) and Sanne and Wiese (2018), The inconsistent outcomes have hindered the development of a comprehensive structure for small and medium-sized enterprises (SMEs) to embrace e-marketing.

However, the adoption of e-marketing among SMEs is still relatively low (Otika, *et al.*, 2022), especially in developing countries like Jordan. This study aims to investigate the influence of IT awareness and IT infrastructure on the adoption of e-marketing among SMEs in Jordan. One of the factors that hinder the adoption of e-marketing is the lack of IT awareness and IT infrastructure among SMEs.

### **Literature Review**

The literature on e-marketing adoption among SMEs highlights the critical role of IT awareness and IT infrastructure in promoting the use of e-marketing. IT awareness refers to the knowledge and understanding of the benefits and opportunities that IT offers to businesses. IT infrastructure refers to the hardware, software, and networks that support the use of IT in business operations. Several studies have found that SMEs with higher levels of IT awareness and better IT infrastructure are more likely to adopt e-marketing compared to those with lower levels of IT awareness and poorer IT infrastructure (Al-Qirim, 2006; Chou *et al.*, 2009; Dlodlo, & Dhurup, 2013). E-marketing refers to the use of digital technologies to promote products and services. E-marketing includes various techniques such as search engine optimization (SEO), social media marketing, email marketing, and mobile marketing. E-marketing provides SMEs with the opportunity to reach out to a wider audience and promote their products and services at a lower cost compared to traditional marketing techniques (Teixeira, *et al.*, 2018).

Furthermore, the size of the SMEs has also been found to have a significant effect on e-marketing adoption. Larger SMEs are more likely to have better IT infrastructure and higher

levels of IT awareness, which makes them more likely to adopt e-marketing compared to smaller SMEs (Chou et al., 2009; Dlodlo, & Dhurup, 2013).

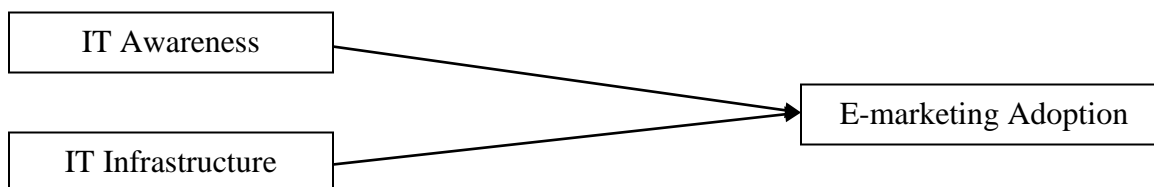
### **E-marketing Adoption by SMEs**

The growth of SMEs has been greatly influenced by Information Technology. This has allowed SMEs to expand their business and reach customers worldwide without geographical barriers and time limitations (Mugobi & Mlozi, 2020; Qashou, & Saleh, 2018). The adoption of e-marketing has empowered small and medium-sized enterprises (SMEs) to discover and capitalize on market prospects, adapt to the evolving business landscape, and broaden their customer base despite their restricted resources (Teixeira et al., 2018). Several studies (eg. Mapunda 2019; Mugobi & Mlozi, 2020; Rahayu, & Day, 2015; Kurian, et al., 2019; Otika, *et al.*, 2022; Mzee, Ogweno, & Irene, 2015; Yaseen, et al., 2019; McLaughlin & Stephens, 2019; Sanne & Wiese, 2018; Qashou, & Saleh, 2018; Malinga, & Maiga, 2020; Mohammed, Almsafir, & Alnaser, 2013; Mashenene, & Rumanyika, 2014; Zamani, 2022; Mzee, Ogweno, & Irene, 2015) aimed to recognize the elements that impact the adoption of e-marketing by small and medium-sized enterprises (SMEs). These factors consist of "IT skills," "knowledge," "education," "availability of resources," and "IT infrastructure," perceived relative advantage, perceived less complexity, competitive pressure, perceived usefulness, technical strategy, perceived ease of use, lack of training and IT knowledge, limited usage of social media and email, lack of human skills, attitude, subjective norm, perceived behavior control, limited knowledge, lack of awareness, difficulty in recruiting and training skilled professionals, price of digital marketing services, owners' innovativeness, owners' IT experience and knowledge, expected benefits, firm characteristics, and environmental factors. Additionally, attitude, compatibility, and perceived usefulness are critical determinants that affect e-marketing adoption among small and medium-sized enterprises (SMEs). Therefore, in line with the above literature reviewed, this study comes up with the following assumptions:

H1: IT Awareness significantly influenced the adoption of e-marketing among SMEs in Jordan.

H2: IT Infrastructure significantly influenced the adoption of e-marketing among SMEs in Jordan.

### **Research Framework**



**Figure 1:** *Conceptual Framework*

### **Theory of Planned Behavior**

According to Ajzen's (1991) TPB model, an individual's intentions drive their actual behavior, and intentions are influenced by their attitude towards the behavior, subjective norms, and perceived behavior control. Attitude refers to an individual's emotional state towards performing a behavior, while subjective norms refer to their perception of others' expectations regarding the behavior, and perceived behavior control is the belief that they can exert the necessary effort to perform the behavior. Taylor and Todd (1995) further elaborate on these constructs, with perceived behavior control being achieved through circumstances that provide the necessary means and “self-efficacy” being an person's self-assurance to transmit out the behavior. The Theory of Planned Behavior (TPB) model has been extensively utilized to explore the uptake of groundbreaking technology in the small and medium-sized enterprise (SME) sector (Mapunda, 2019; Mojekwu et al., 2021). In this research, the TPB model is utilized to determine the crucial factors that impact the adoption of e-marketing among SMEs by clarifying their willingness to adopt e-marketing through their attitude, subjective norm, and perceived behavior control.

### **Methodology**

A cross-sectional survey research design was used to collect data from SMEs in Jordan. A self-administered questionnaire was distributed to a sample of 300 SMEs that have been operating in Jordan for at least two years. The survey collected data on SMEs' IT awareness, IT infrastructure,

and e-marketing adoption using stratified sampling followed by simple random sampling. Data were analyzed using PLS-SEM (PLS 4.0).

## **Analysis and Findings**

### **Assessment of the Measurement Model**

The primary objective of the Measurement model is to sift through the data by evaluating and verifying the validity and reliability of the constructs before establishing the "quality of measures." The researcher assesses the data using "indicator reliability" with an accepted threshold of 0.4. "Composite reliability" is utilized to examine "internal consistency," and a value of 0.7 is deemed appropriate. "Convergent validity" is assessed using "average variance extracted" (AVE), which must be set at 0.5 or higher according to Chin (1998). "Factor loading" is employed to evaluate "discriminant validity," and any item that loads higher on another construct than its loading should be eliminated, as suggested by Chin (1998) and Hair (2010). Consequently, based on the fact that none of the items have a reliability score less than 0.4, it is concluded that the adapted items are dependable in this study.

All of the items are grouped into their respective constructs, with loadings ranging from 0.536 to 0.831, which is deemed acceptable since all values surpass the cutoff point of 0.4, according to Chin (1998) and Hair, Ringle, and Sarstedt (2011). Correspondingly, the composite reliability values range from 0.781 to 0.941, exceeding the suggested threshold of 0.7 (Hair et al., 2011). To confirm convergent validity, AVE was utilized, with values ranging from 0.518 to 0.606, all over the minimum cutoff point of 0.5, as recommended by Hair et al. (2011). Finally, to validate discriminant validity, the AVE is contrasted to the squared correlation of the interrelated variables of the corresponding constructs, signifying sufficient discriminant validity. The summary of our measurement model evaluation is presented in the table below.

**Table 1:** Assessment of the Measurement model

Constructs	Construct Reliability	Convergent Validity	Construct validity		
			Discriminant Validity		
	CR	AVE	E-MKT	IT-AW	IT-INF
<b>E-MKT</b>	0.809	0.515	<b>0.711</b>		
<b>IT-AW</b>	0.870	0.533	0.651	<b>0.800</b>	
<b>IT-INF</b>	0.869	0.571	0.491	0.780	<b>0.780</b>

### Structural Model

After ensuring that the "measurement model" met the standards for construct validity and reliability, the research then utilized the "PLS Algorithm and Bootstrapping" with the aid of Smart PLS 4.0 to test its proposed assumptions. Table 3 displays the results of the hypothesis testing. The statistical analysis revealed that the IT Awareness (IT-AW) Had a significant impact on the uptake of e-marketing among small and medium-sized enterprises (SMEs) in Jordan ( $\beta=0.361$ ;  $t=7.736$ ), thereby supporting H1. Additionally, H2 is also supported as the IT Infrastructure (IT-INF) has a noteworthy positive effect on the adoption of e-marketing by small and medium-sized enterprises (SMEs) in Jordan ( $\beta=0.437$ ;  $t=9.687$ ).

**Table 3:** Hypothesis Testing Results

Hypotheses	Relationships	Beta	SE	T Statistics
H1	IT-AW -> E-MKT	0.361	0.047	7.736
H2	IT-INF-> E-MKT	0.437	0.045	9.687

### Discussion and Conclusion

This empirical research aims to explore the impact of IT awareness and IT infrastructure on the adoption of e-marketing by small and medium-sized enterprises (SMEs) in Jordan. The study's objective is to recognize the factors that facilitate or obstruct SMEs in Jordan from adopting e-marketing and to provide guidance on how to enhance the use of e-marketing to enhance the

competitiveness of SMEs in the country. The results of the study revealed that IT awareness and IT infrastructure significantly influenced the adoption of e-marketing among SMEs in Jordan. The study found that SMEs with higher levels of IT awareness and better IT infrastructure were more likely to adopt e-marketing compared to those with lower levels of IT awareness and poorer IT infrastructure. The study also found that the size of the SMEs had a significant effect on e-marketing adoption, with larger SMEs being more likely to adopt e-marketing compared to smaller SMEs.

The study concludes that IT awareness and IT infrastructure play a critical role in the adoption of e-marketing among SMEs in Jordan. Therefore, it is important for SMEs to invest in IT infrastructure and provide IT training to their employees to increase their IT awareness. SMEs should also develop e-marketing strategies that are tailored to their business needs and target market to increase their competitiveness in the market. Finally, policymakers and business support organizations should provide SMEs with the necessary support and resources to enhance their IT infrastructure and IT awareness, which will enable them to compete effectively in the global market.



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