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## Factors affecting buyers' trust in e-commerce in Palestine

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Rania Abdullah

Department of Information Technology,  
Palestine Technical University – Kadoorie,  
P.O. Box 7, Tulkarm, Palestine  
Email: rania\_abdullah@yahoo.com

Yahya Saleh\*

Industrial Engineering Department,  
An-Najah National University,  
P.O. Box 7, Nablus, Palestine  
Email: ysaleh@najah.edu

\*Corresponding author

**Abstract:** Electronic commerce (e-commerce) is relatively a new concept and research topic in developing countries including Palestine. In this form of commerce, the first impression that users create about an organisation is often based on the organisation's website's trustworthiness. This has motivated many researchers to investigate the factors that influence buyers' trust in such websites. The main purpose of this study is to investigate the potential factors affecting buyers' trust in e-commerce in Palestine. More specifically, the study embraces a multi-dimensional construct of trust (integrity, benevolence, ability) rather than examining each single dimension of trustworthiness individually. In addition, the effect of independent variables including website design attitudes, reliability, privacy and security attitudes, customer satisfaction and governmental factors on e-commerce's trust dimensions have been mathematically investigated. To this end, relevant data from a random sample of 354 Palestinian citizens who have experienced the online shopping, or who have interest in online purchasing, were collected. Statistical analyses revealed significant effects of all independent variables except reliability on buyers' trust in e-commerce in Palestine. Also, four linear regression models relating the independent variables with e-commerce's trust and its three dimensions (integrity, benevolence, ability) have been built and statistically validated.

**Keywords:** electronic commerce; e-commerce; trust; integrity; ability; online purchasing; regression; benevolence.

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**Biographical notes:** Rania Abdullah is currently an Instructor of Engineering Management and Information Technology – Software and Databases from the Palestine Technical University – Kadoorie. She obtained her BSc in Information Technology and MSc in Engineering Management. She teaches courses related to software and databases. Her research interests are mainly in e-commerce, e-businesses, databases and software engineering.

Yahya Saleh is currently an Assistant Professor of Industrial Engineering at the Department of Industrial Engineering, An-Najah National University. In addition, he is the Director at the An-Najah Business Innovation and Partnerships Center (NaBIC). He received his BS in Industrial Engineering from the An-Najah National University in 2000 and MS in Industrial Engineering and Engineering Management from the Jordan University in 2003. In 2011, he received his PhD in Industrial Engineering and Operations Research from the Bilkent University, Ankara, Turkey. His research interests include operations research, applied game theory, supply chain management, dynamic programming, water resources optimisation and management, life cycle assessment of products/services and human factors and ergonomics, innovation management.

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## 1 Introduction

The current era is characterised by the tremendous scientific and technological advances witnessed in various fields of life. The most important of these are the significant developments in information and communication technology (ICT) that have changed the economic nature and lifestyle of all customers in both developed and developing countries. The internet – the tool of globalisation and rapid human communication – imposed itself in different countries and in all aspects of life, mainly in the business environment where online transactions represent the new form of transactions that emerged due to these developments. This form of transactions became common in the developed countries by the time of using the internet for commercial and marketing purposes. For example, in Italy, business to consumer electronic commerce (e-commerce) sector is gradually strengthening in spite of a deep mistrust and a negative attitude amongst investors in its beginnings (Bertele et al., 2002). E-commerce is a new concept that has changed the traditional business and has its great influence on the economy (Nanehkaran, 2013; Varela et al., 2017).

According to the Statistics portal website, the European e-commerce market is experiencing a positive growth in most European countries, yielding in one of the most increasingly growing industries. Similarly, e-commerce in China is exploding reached \$600 billion by the end of 2013 (Stanley and Ritacca, 2014). On the other hand, e-commerce is growing rapidly in developing countries (Turban et al., 2015); it is even considered as an economic asset in developing countries like India (Maitra, 2013). The shift from traditional to online shopping, and from product and sale philosophy to the marketing philosophy (Kotler, 2000) has changed customers' purchasing habits and patterns. Thus, under the assumption that this transformation might provide businesses with new opportunities, coping with market orientation is a necessity in order to increase their market share and attract more customers (Tajeddini et al., 2013). Particularly, that market orientation has been found to have a significant positive influence on market and financial performance (Tajeddini et al., 2015).

In Palestine, people are more familiar with traditional shopping, where physical interaction with the vendor takes place, and the possibility of examining the products before buying them is valid. In online shopping, the context is different; buyers have to interact with a website rather than the vendor himself/herself, with a limited ability to see the products through the displayed pictures on the screen only (intangibility). This may

create some ambiguity; as a result, it is difficult to establish trust with e-vendors. Trust is necessary in both conventional and online transactions; nevertheless. Moreover, it is more important in online transactions due to the uncertainty and the lack of face-to-face interaction (Wang et al., 2016).

According to the statistics published by the Palestinian Central Bureau of Statistics (PCBS, <http://www.pcbs.gov.ps>) on May 17, 2018, the percentage of internet users who have bought or sold over the internet is 4.5%, and the number is estimated at about 80,000 persons. Several factors may contribute to this low percentage including lack of proper communication; absence of direct contact with the products; products' quality and high prices (Wang et al., 2016). On the top of that, a repeated factor for not purchasing from internet vendor is the lack of trust in e-commerce (TRST) websites (Huang and Chang, 2017; Kim et al., 2009a; Najafi and Kahani, 2016; Nefti et al., 2005; Patton and Jøsang, 2004; Pennanen, 2005; Zhang and Pan, 2009). Thus, for e-commerce business, online trust forms a pre-requisite to achieve business success (Awad and Ragowsky, 2008; Hong and Cho, 2011).

Several studies have investigated the dimensions of trust in the online environment. These studies included issues such as customer satisfaction, security and privacy attitudes, order fulfilment, web design elements, reliability, usability and social presence. Therefore, the purpose of the current study is to benefit from the results of these studies in order to identify the important potential determinants of Palestinian buyers' trust in e-commerce, as well as to determine the relative significance of each factor in promoting buyers' trust in online purchases. Within the Palestinian context, the examined determinants include website design attitudes (WSDA), reliability fulfilment, security/privacy attitudes (SPA), customer satisfaction fulfilment (CSF) and perception of governmental factors (PGF). More specifically, a model was developed linking five potential determinants derived from previous studies and models in literature to buyers' trust in e-commerce. By examining the influencing factors on TRST, practitioners and businesses' owners might get a better chance to design their e-commerce site in a more trustworthy way. This would enable them to benefit from the new opportunities and innovations offered by e-commerce as an emerging sector in Palestine, especially, that many researches have proven that the entrepreneurial orientation of businesses lead higher performance (Jalali et al., 2013; Tajeddini, 2015b).

## **2 Literature review**

### *2.1 E-commerce definition and types*

According to World Trade Organization (WTO), e-commerce is defined as "the production, distribution, marketing, sale or delivery of goods and services by electronic means." E-commerce has different types including business to business (B2B), customer to customer (C2C), business to customer (B2C), and mobile commerce (m-commerce). This study focuses on B2C commerce, where the selling party is the business or the e-vendor represented by its website, and the buying party is the customers or individuals (Chugh and Grandhi, 2012). An online vendor interacts with the customers through a website, which is the front face of the business through which different transactions are conducted. An online vendor website is the "full representation of the shopping" (Qin, 2007).

## 2.2 *Trust definition*

Trust is a complex concept to define. There are dozens of definitions in literature. The reason for the multi-definitions is that each discipline defines trust from its own perspective. Scholars defined trust from three primary perspectives: psychology, sociology and economic (organisational). Psychologists view trust as a psychological state of an individual in which s/he is willing to risk the action of others (Tyler, 1990). Sociologists view trust as a dynamic element between and within groups (Granovetter, 1985) or institutions (Zuker, 1986). In economy, trust is viewed as either calculative (Williamson, 1993), or institutional (North, 1990). In the calculative trust, how human actors are described and the perception of contracting processes are both vital to the development of a science of an organisation, whereas the institutional trust refers to the organisational and social environment surrounding contracting processes. Therefore, by integrating the various definitions of trust in various disciplines, a comprehensive definition of trust could be obtained (Rousseau et al., 1998).

Several trust definitions are available in e-commerce field since there are various types of trust (Turban et al., 2015). Examples include consumer trust in sellers; consumer trust in the computerised system; trust between buyers and sellers; trust in foreign trading partners; and TRST intermediaries. Though, most research of TRST concentrates on consumer trust. In general, trust could be defined as “the willingness of one person to believe in the actions taken by another party.”

## 2.3 *Trust related theories*

The theoretical framework of this study is based on social exchange theory and cue signalling theory. Below, more elaboration on these theories is given.

### 2.3.1 *Social exchange theory*

Transactions' exchanges in online environments between the buyers and online vendors have similar components to that of social exchange, and hence, using social exchange theory helps in understanding trust (Chang et al., 2013). In social exchange theory, individuals are motivated by rewards they expect to get to establish voluntary interaction with others (Argün, 2012). In e-commerce environment, the first party is the buyer, while the other party is the e-vendor website, buyers have to measure the benefits they are expecting to gain and compare them to the risk level their privacy is exposed to (Gurung, 2007). Each time the customers voluntarily provide some personal information to the e-vendor, s/he should be rewarded with more customised products and richer experience (Dayal et al., 1999). For the e-vendors, the outcome of trust is a long-term exchange relationship between the two parties (Doney and Cannon, 1997; Dwyer et al., 1987; Ganesan, 1994).

### 2.3.2 *Cue signalling theory*

Information economics under certain circumstances in which both parties of vendors and consumers possess different level of information about a specific transaction forms the basis of signalling theory (Spence, 1974). In e-commerce, the sellers of the products have full information about the characteristics of the product before selling it, whereas

consumers usually have no such information before buying the product and actually start using it. Therefore, the level of information that both parties have is asymmetric before the transaction takes place, in most cases, this asymmetry is an advantage for the selling party (Mishra et al., 1998). Signals are “perceivable indicators of otherwise hidden qualities,” the purpose of using signals is to deliver a certain unobservable quality or feature to the customer in order to trigger behaviour (Donath, 2007). In e-commerce environment, various types of trustworthiness’ signals have been investigated in literature. Seals of approval, return policy, awards from neutral sources, security disclosures and privacy disclosures (Wang et al., 2004); perceived advertising expenses, retailer reputation, and warranties (Biswas and Biswas, 2004); and objective-source rating (i.e., a review from *Consumer Reports Magazine*), a third-party certification (i.e., a ‘trustmark’), and an implication of investment in advertising (Aiken and Boush, 2006).

In this study, signalling theory concepts are involved, as different signals for e-vendors’ trustworthiness have been examined such as availability of trust marks on e-vendor website, security attitudes of the website, and privacy policy and attitudes towards the shared customers’ personal information. These signals are examined as motivators for customers to trust online vendors.

#### *2.4 Previous trust models*

Several researchers have studied the factors that have an impact on buyers’ trust in e-vendors. Table 1 shows some of these. Chen (2007) proposed an integrative model of consumer trust in an e-vendor. The model used five independent variables; WSDA, fulfilment reliability satisfaction, SPA, customer service satisfaction and offline experience satisfaction. The findings of this research revealed that WSDA, fulfilment reliability satisfaction, privacy/security attitudes and customer service satisfaction are the key factors of customer trust. Kim et al. (2009a) conducted a longitudinal approach study. The study focused on the three stages of the purchase process: pre-purchase; purchase; and post-purchase. The findings revealed that trust affects buyer’s purchase decision along with perceived risk and perceived benefits, and that trust affects long-term buyers’ loyalty and satisfaction.

Kamari and Kamari (2012) constructed a four-stage model for B2C including professionalism, reputation, trustworthiness and technological incentives. In electronic world and due to the lack of physical existence, the professionalism is presented by the web interface factors. According to Karvonen (2000), professionalism consists of professional graphic (web design), usability and proper branding. Trustworthiness exists when the consumer has the confidence that the vendor has the ability and motivation to deliver the required item as expected by the consumer. Reputation is an essential factor for TRST, which is built through the feedback that the customers receive from others who have previously interacted with the vendor. Technological incentives refer to the existence of security, users’ information privacy and the payment systems. Another study by Chang et al. (2013) showed that three trust building mechanisms (third-party certification, reputation, and return policy) have a significant effect on trust of the online vendor.

Similarly, Bartikowski and Singh (2014) investigated the customers’ trust drivers in France. The study included 15 trust drivers including advice capabilities, brand equity, content quality, community features, expertise, French cultural markers, ease of contact, fulfilment capabilities, layout design, trustworthy partnerships, personalisation,

navigation, privacy protection, security and usefulness. It was found that the most influencing factors were brand equity 19.1%, layout design 12.8%, content 12.6%, expertise 9% and navigation 8.2%.

Yousefi and Nasiripour (2015) investigated the factors influencing customers' trust in e-banking services. The results showed that the quality of electronic services such as ease of use, privacy and security, individual characteristics of customers such as disposition to trust and features of the bank such as reputation, size and dependence on government have a positive impact on customers' trust in enhancing e-banking services. In addition, Gu et al. (2016) found that five factors (privacy concerns, trust propensity, performance expectancy, facilitating conditions and hedonic motivation) have significant influence on initial trust in wearable commerce.

**Table 1** Partial list of previous trust models

<i>Authors (year)</i>	<i>Dimensions</i>
Kim and Prabhakar (2000)	Trusting party propensity to trust Word-of-mouth referrals Institutional characteristics
Shankar et al. (2002)	Website characteristics (e.g., navigation; friendliness) – user characteristics Other characteristics (e.g., firm size; firm trustworthiness)
Yoon (2002)	Technical aspects: web searching, technology and presentation Transactions' uncertainty and security: security assurance Competency aspects: fulfilment, reputation, and interactions
Flavián et al. (2006)	Usability Satisfaction Loyalty
Lowry et al. (2008)	Brand alliances Website quality
Karimov et al. (2011)	Visual design (graphic, structure) Social cue design (human-like features, assistive interface, social media) Content design (informativeness, brand alliances, e-assurances)
Ganguly et al. (2011)	Communication Social presence Security Privacy Self efficacy
Kamari and Kamari (2012)	Professionalism [professional graphics (web design), usability, proper branding] Trustworthiness of company reputation Technologic incentives (security, user's information privacy, payment systems)

**Table 1** Partial list of previous trust models (continued)

<i>Authors (year)</i>	<i>Dimensions</i>
Matthew and Turban (2014)	Trustworthiness of internet merchant
	Trustworthiness of internet shopping medium
	Technical competence
	Reliability
	Medium understanding
	Contextual factors
	Effectiveness of third-party certification
	Effectiveness of security infrastructure
Riquelme and Román (2014)	Perceived privacy
	Perceived security
Ajmal and Yasin (2015)	Security factors
	Privacy factors
	Ethical and legal issues factors
	Intellectual property rights factors
	Loyalty factors
Agag and El-Masry (2017)	Consumer-based (experience, propensity to trust)
	Company-based (reputation of website, perceived size of website)
	Website-based (perceived ease of use, perceived usefulness, perceived quality)
Najafi and Kahani (2016)	Firms readiness (e-service, quality of website/web portal, information, EC system)
	Information security readiness
	Interpersonal or humans readiness
	Technical and infrastructure readiness
	Legal and laws readiness
	Live chats, forums, EC in social networks
Toufaily and Pons (2017)	Functional characteristics of the website (design, ease of use, security, interactivity)
	Relational characteristics of the website (personalisation, support quality, social presence and virtual community)

In the Arab world context, studies in this field are few. One of these few studies is the one conducted by Eid (2011) who investigated the determinants of customers' loyalty, in this study trust was used as a moderating variable whose predictors were user interface quality, information quality, perceived security and perceived privacy. The results revealed that trust' determinants included the four factors except information quality. Another study by Yahya et al. (2015) proposed a model that suggests that trust factors affecting the B2C e-commerce in Saudi Arabia are divided into two categories; governmental and non-governmental variables. The non-governmental variables consisted of trustworthy, privacy and secure online payment options. The model suggests that flexible governmental policies, legislation rules, protection of customer rights, and

banking network systems with less internet fees are pre-requisite for e-commerce expansion.

## 2.5 *Constructs definition*

### 2.5.1 *Website design attitudes*

Unfortunately, there is no agreement among the researchers about the factors that constitute the website design. This could be attributed to the fact that website design construct is a multi-dimensional one (Kim and Stoel, 2004). According to Ganguly et al. (2010), the architecture perspective for website design is composed of four components; content, structure, interaction and presentation. Content refers to the information on the website, structure refers to the arrangement of the information (grids, menus, hierarchical). Interaction represents the way the customer can access the website in the easiest way. Presentation refers to the way how the information is presented on the website; it deals with aesthetic aspects like colour, size, images, audio-visual aids and a like. In this study, the architecture perspective of WSDA is considered.

### 2.5.2 *Fulfilment reliability (RLI)*

Omar et al. (2015) in a study of the influence of reliability dimension of e-commerce on Libyan customers satisfaction suggested that there are eight attributes of reliability, which are accurate delivery service, website always available, complete order service, keeping promotion promise, the online service always correct, keeping service promise, company being truthful about its offering and accurate online booking records. Wolfenbarger and Gilly (2003) suggested that reliability should involve technical reliability as well as functional reliability, and defined reliability as the delivery of the right product in the right time promised with the right information that have been displayed on the website, so it matches the customers' expectations. This definition is adopted in the current study to define reliability.

### 2.5.3 *Security/privacy attitudes*

Data privacy can be defined as the readiness of customers to share their personal information over the internet in order to conduct a purchase, whereas data security can be defined as all the mechanisms and practices used to protect the information from any possible threat Belanger et al. (2002). Li et al. (2011) emphasised the importance of customer's awareness of the privacy statement on the website, it defined awareness of privacy statement as "an individual's awareness of the content in the privacy statement of a web site." Besides, the readability of the privacy statement is important. Readability is the ease of understanding and comprehension based on writing style (Klare, 1963). Many privacy policies remain unread due to their poor readability (Cadogan, 2004; Ermakova et al., 2015; Sunyaev et al., 2014). Therefore, websites' operators should make sure that their privacy policies are formulated in an easy language to guarantee the full understanding and awareness of the customer about its contents. Regarding security, Niranjnamurthy and Chahar (2013) presented a list of e-commerce security tools including firewalls (software and hardware), public key infrastructure, digital certificates, digital signatures, biometrics (retinal scan, fingerprints, voice etc), passwords, and locks and bars (network operations centres). Although the availability of security features do



not guarantee a completely secured system, they are vital to build a secure system and thus gain customers' trust. In the current study, Li et al.'s (2011) definition of privacy is adopted, and security is defined as the availability of satisfactory security mechanism in the website.

#### *2.5.4 Customer satisfaction fulfilment*

Johnson and Fornell (1991) referred to customer satisfaction as the overall judgment of the customer on the performance of an offering to date. Anderson and Swaminathan (2011) conducted a research that investigated the factors that drive customer satisfaction and loyalty in e-markets. Eight factors were studied including adaptation, commitment, network, assortment, transaction ease, engagement, nurturing and interactivity. The finding of the research proved that all factors were significant except nurturing and interactivity. In the current study, four factors are adopted, these are adaptation, commitment, network and assortment. Nurturing and interactivity were excluded because they were not significant, whereas transaction ease and engagement were not included because they are covered in the elements of the first independent variable of the research model (i.e., website design). Although they are studied as determinants of WSDA, they can lead as well to customer satisfaction since website quality has a direct and positive impact on customer satisfaction (Bai et al., 2008; Tandon et al., 2016). Adaptation is the customisation of products to match customers' desires. Commitment is the degree to which the e-vendor is willing to solve any problem the customer may confront in a satisfactory way. Network is the virtual community provided by the website through which customers can share opinions and experiences. Finally, assortment is the availability of variety of products provided in the website.

#### *2.5.5 Perception of governmental factors*

The lack of clean policy and regulations to guide the promotion of e-commerce expansion in developing countries is the major obstacle to the adoption of e-commerce (Lawrence and Tar, 2010). AlGhamdi et al., (2011) argued that the governmental support is a crucial factor for the success of e-commerce. Therefore, the perception of the customers about the governmental role in promoting and encouraging e-commerce is important. Yahya et al. (2015) suggested seven governmental facilities for enhancing TRST including monitoring and supervision of website, creating ICT infrastructure, issuance and regulations, owing home address, payment options, consumer protection legislations, and clarifying marketplace rules.

This study adopts two variables of Yahya et al.'s (2015) model to measure the governmental variables which are creating ICT infrastructure, issuance and regulations since these are the most applicable in Palestine. The context of Saudi Arabia is similar to a large extent to the context of Palestine in respect to cultural background and regulations of communication sector. In 2013, the Palestinian Legislative Council passed the Electronic Transactions Act prepared by the Ministry of Communications and Information Technology in the first reading in preparation for the final approval and the work done as the first law of its kind in Palestine. This act matches the legislation of the neighbouring countries such as (Jordan, Egypt, United Arab Emirates, Tunisia, Saudi Arabia and Lebanon). Under this act, the electronic transaction environments are similar in the aforementioned countries, thus justifying the adoption of the variables. But

till now, since the legislation council is not active the law has not been approved yet. On the other hand, the other factors were excluded since no home addressing is available in Palestine; customers' protection legislations and marketplace rules could be included in the regulation determinant. Finally, payment options availability is considered as part of the ICT infrastructure readiness whereas the security of using electronic payment methods is covered in the security components of security and privacy construct.

### *2.5.6 TRST vendors*

Trust can be defined in terms of ability, integrity and benevolence of the trustee (Bhattacharjee, 2000; Gefen and Straub, 2004; McKnight et al., 2002; Pavlou, 2003; Pavlou and Fygenson, 2006). In offline commerce, integrity concerns if the trustee follows moral and ethical principles that are deemed acceptable by the trusting party. Benevolence concerns the degree to which the trustee has good will or empathy towards the trusting party, whereas ability is related to skills and competencies of the trustee in a specific context (Gefen and Silver, 1999; Gefen, 2003; Schoorman et al., 2007; Jarvenpaa et al., 1998, 1999; McKnight et al., 1998; Ridings et al., 2002).

The three dimensions of trust in the electronic environment have similar meaning to their counterparts in offline commerce. Integrity in online environment is the degree to which an e-vendor keeps his/her promises towards the customers (Pavlou and Fygenson, 2006), whereas benevolence in online context is that the e-vendor will support and stand behind his/her products and act in a fair way even if s/he has the chance to act otherwise (Wu and Tsang, 2008). Finally, ability in online context refers to customers' perception that the e-vendor has the required capabilities to do deliveries, exchange and support the products (Wu and Tsang, 2008). Perceptions of these elements affect the trusting party to have trust towards the trustee.

## *2.6 Research hypotheses*

This study aims to test five main hypotheses to assess the factors affecting TRST. More specifically, the hypotheses test the influence of the five main independent constructs on the dependent variable. Each of the independent constructs except reliability consists of several sub-factors as well as the dependent construct that consists of three sub-factors. Hence, the study also aims to test the effect of each independent sub-factor on each of the three dependent sub-factors. Ultimately, 36 sub-hypotheses are derived from the main hypotheses. All of these hypotheses are tested at 5% significance level.

### *2.6.1 First hypothesis*

E-vendor website is like a mirror that gives gestures and semantics for trustworthiness of the e-vendors for its visitors and precisely the first time shoppers. Thus, investing in website design represents a mean through which e-vendors can communicate their abilities and boost buyers purchase intentions (Schlosser et al., 2006). Yet, since ability is a stable internal characteristic (Weiner, 1972), buyers will likely generalise their trust in an e-vendor's ability in one field (website design) to other related field (e.g., order fulfilment and customer satisfaction). Therefore, instead of being purely cosmetic, website design likely communicates important information regarding the performance of the e-vendor. Different scholars have studied the effect of WSDA on trust. Each of these

studies considered some dimensions of the WSDA and their impact on trust. For instance, Cyr (2008) studied the influence of three elements of website design namely, visual design, navigational design and information design on trust. The results showed that the three elements had a significant influence on trust and they together explain about 35% of the variation in trust. Similarly, Ganguly et al. (2010) believe that the visual design of the website is a key element in representing website usability. Therefore, improving the visual design of website should result in better usability of the website which in turn, would reduce ambiguities and increase the trustworthiness of the e-vendor. Eid (2011) found that interface quality has a positive influence on TRST. Bartikowski and Singh (2014) pointed that website design features (layout, content, and navigation) were among the most frequently depicted trust drivers for French users. Previous work showed that online buyers are more likely to visit and shop from better-designed websites (Mithas et al., 2006). Accordingly, website design features play a key role in developing buyers' initial beliefs about the e-vendor (Karimov et al., 2011; Wells et al., 2011) and communicating product and vendor qualities to buyers (Wells et al., 2011) which enhance trust level of the e-vendor among customers. Moreover, Corbitt et al. (2003) indicated that perceived website quality is positively related to TRST. Hence, to test the influence of WSDA on buyers' TRST, the following hypothesis is formulated.

H1 WSDA have no significant influence on buyers' TRST in Palestine.

WSDA consist of content, structure, interaction and presentation. Previous researches that investigate the influence of each of these variables on the three factors that comprise TRST are very rare. Regarding the first factor, the informational content of the website includes information about the company behind the site; the products in details; and website policies regarding security issues, customer help or services (Chang and Chen, 2008). This comprehensive diversification carries a lot of information that will help assess the integrity, benevolence and ability of the trustee particularly that customers preferring websites that offer comprehensive information about the product to overcome the lack of tangibility (Demangeot and Broderick, 2010). For customers to establish trust with the e-vendor, information has to be revealed about the products. In reality, some e-vendors promote products that may mislead customers, which in turn will negatively influence the purchase and hindering customers' trust of products (Moodie et al., 2012). Moreover, information quality represents a key feature that influences user satisfaction, trust and loyalty towards e-commerce (Huang and Benyoucef, 2013). Song and Zahedi (2003) pointed that information quality positively influence trust beliefs (ability, benevolence, and integrity) in health intermediaries. Accordingly, the following three sub-hypothesis are presented:

H1a The content of the website is not significantly related to the integrity of the e-vendor.

H1b The content of the website is not significantly related to the benevolence of the e-vendor.

H1c The content of the website is not significantly related to the ability of the e-vendor.

The second factor of the website attitudes is structure. The impact of this variable on TRST as a one-dimensional constructs which was studied by researchers (Karimov et al., 2011; Bartikowski and Singh, 2014). Browne et al. (2009) recommended in the Forrester Research that in order to connect effectively with the French online customers, website

designers should enhance the structure and the usability of the website and to test it extensively before launching. Such testing helps in building a positive impression and enhancing customers trust in the website. Relating to the research that has examined the separate influence of structure on each of the three components of trust (integrity, benevolence, and ability), Zhou and Tian (2010) believe that good navigability (structure) can enhance the search efficiency of a consumer and the perception of convenience, which in turn would enhance the consumers' initial trust in the website. The results of the study showed that customers' perception of website quality dimensions (user interface, website information, service quality, and navigability) on the three components of trust was not significant. In accordance to that, this study presents the following three sub-hypotheses:

- H1d The structure of the website is not significantly related to the integrity of the e-vendor.
- H1e The structure of the website is not significantly related to the benevolence of the e-vendor.
- H1f The structure of the website is not significantly related to the ability of the e-vendor.

Interaction (ease-of-use) represents a key point which affects technological know-how approval (Masoud et al., 2014). It was extensively investigated as an antecedent of trust as a one-dimensional construct (Toufaily and Pons, 2017; Agag and El-Masry, 2017; Bartikowski and Singh, 2014). Song and Zahedi (2003) examined the impact of ease of use on the ability component of trust of the health infomediaries and found a significant influence. Since ability is a component of the three trust beliefs, i.e., ability, benevolence and integrity (McKnight et al., 2002), then it is reasonable to test the influence of ease of use on the other two components. Moreover, Koufaris and Hampton-Sosa (2004) pointed that website ease of use is a significant antecedent of consumers' initial trust in the e-vendor. Therefore, the three sub-hypotheses that relate interaction with trust dimensions are:

- H1g The interaction of the website is not significantly related to the integrity of the e-vendor.
- H1h The interaction of the website is not significantly related to the benevolence of the e-vendor.
- H1i The interaction of the website is not significantly related to the ability of the e-vendor.

Presentation that has been found to have a significant influence on trust as a one-dimensional construct (Karimov et al., 2011; Toufaily and Pons, 2017), or as a multi-variable construct as in the study of Zhou and Tian (2010), where user interface had a positive influence as a component of website quality dimensions on the three components of trust. Based on these studies, the following sub-hypotheses are presented:

- H1j The presentation of the website is not significantly related to the integrity of the e-vendor.
- H1k The presentation of the website is not significantly related to the benevolence of the e-vendor.

H11 The presentation of the website is not significantly related to the ability of the e-vendor.

### *2.6.2 Second hypothesis*

In traditional retailing commerce, reliability is known to have a significant impact on the business' success (Karami et al., 2013). In online shopping, customers do not receive their purchases immediately when the transaction takes place, they have to wait a couple of days or even more before actually have their purchase in hand depending on the website delivery procedures. Frustrating experiences for online buyers such as receiving an online order late or never at all can ensure that they do not shop with the e-vendor again. Thus, proper fulfilment that encompasses warehouse organisation, order management, packaging, shipping and customer communication is vital for any e-vendor (Rheude, 2018). In their empirical study of B2C operations of food retailers, Heim and Sinha (2005) found that variables underlying the order fulfilment process such as product availability, ease of return, and timeliness of delivery have a significant positive influence on customers' trust in the e-vendor. Salam et al. (2005) claimed that order processing and delivery implies the competence dimension of e-vendor's TRST. Thus, it is necessary for e-vendors to keep their promises and fulfil their customers' expectations to establish trust (Urban et al., 2000). The ability to fulfil customers' orders and deliver them on time could determine an e-vendor's success (Lee and Whang, 2001). Petrovic et al. (2003) defined a 'trust pyramid' that consists of six elements divided into two groups: core elements including order fulfilment, secure technology and merchant legitimacy; and three subtle trust builders including tone, customer control, and consumer collaboration. Apparently, the reliability of the e-vendor in fulfilling orders as promised to the customers is a vital element of trust. Wolfenbarger and Gilly (2003) pointed that fulfilment/reliability is the most important factor that affects TRST. Order fulfilment was among the most significant predictors of trust for sites with high level of information risk and involvement (Bart et al., 2005). Similarly, reliability (order fulfilment) had a positive influence on e-trust in online loyalty development process (Kim et al., 2009b). In addition, reliability of the website enhances customer trust (Ridings et al., 2002). Accordingly, the second hypothesis is formulated as follows to test fulfilment reliability:

H2 Reliability fulfilment has no significant influence on buyers' TRST in Palestine.

### *2.6.3 Third hypothesis*

For customers, privacy, security, functionality and user-friendliness issues represent barriers to online shopping (Gupta and Dubey, 2016). Customers are concerned about the privacy and security risks associated with the unauthorised gathering of personal information (Chiu et al., 2014). Consequently, disclosing personal information to an e-vendor requires customers to cede a certain level of trust. They also want to make sure that the used technology enables them to freely operate and own sensible control over it. Hoffman et al. (1999) stated that 63% of online customers refuse to share their personal information such as gender, date-of-birth, name with e-commerce vendors due to the lack of trust in such websites. Thus, in order to understand why customers engage or do not engage in e-commerce, and to establish strong relationships with customers and gain profits, e-vendors should consider the concept of trust and analyse its relationships with other important concepts such as perceived risk, security, and privacy. Privacy and

security are predictive factors of customer judgments on the website (Wolfenbarger and Gilly, 2003; Najafi and Kahani, 2016). This judgment depends on the availability of adequate security features, feeling secure giving out credit card information at this site, the company behind the site is reputable, the company is well-established and trusting that this site will not misuse any personal information. Privacy was among the most significant predictors of trust for sites with high level of information risk and involvement (Bart et al., 2005). Similarly, Eid (2011) pointed that perceived security and privacy of the e-vendors' website have a positive influence on TRST. In addition, Wu et al. (2012) found that privacy policy components including security issues have a positive influence on customers' TRST. In the same manner, Koufaris and Hampton-Sosa (2004) indicated that security control forms a significant antecedent of customers' initial trust. Website privacy and security were the most frequently-recognised website characteristics that enhance trust among customers (Bartikowski and Singh, 2014). Whenever an electronic transaction is to take place, security and trust should be taken into account from both the trustor and the trustee, which helps in gaining confidence and TRST transactions (Najafi and Kahani, 2016). Based on this, the third hypothesis is formulated to test security and privacy.

H3 Security and privacy attitudes have no significant influence on buyers' TRST in Palestine.

Security represents a crucial factor that influences consumers' trust in an e-vendor. If the e-vendor fails to offer the threshold security level, perceived risks increases, decreasing customers' initial trust level. Pittayachawan et al. (2008) noted that as the security level increases in the website, trust level in the e-vendor increases. Zhou and Tian (2010) found that the higher perceived security level, the higher potential customers would have in an e-vendor benevolence and integrity, and no such relation was noticed regarding e-vendor ability. Therefore, the following sub-hypotheses are formulated:

H3a The security attitudes of the website are not significantly related to the integrity of the e-vendor.

H3b The security attitudes of the website are not significantly related to the benevolence of the e-vendor.

H3c The security attitudes of the website are not significantly related to the ability of the e-vendor.

There is a lot of evidence supporting significant relationships between privacy concern and trust (Ganguly et al., 2011; Román, 2007; Van Dyke et al., 2007). Perceived privacy protection on the website plays an important role in reducing consumers' perceptions of risk that stem from online disclosure of personal information (Metzger, 2006), hence, motivates online transaction through perceived trustworthiness of the e-vendor (Kim et al., 2008). Customers are concerned about how e-vendors gather and use their personal information. About 68% of the customers want e-vendors to disclose how and where their information is being processed (Krebsbach, 2006 cited in Pittayachawan et al., 2008), whereas 95% of customers refuse to provide information to the e-vendor sites that lack privacy statement (Gauzente, 2004). Song and Zahedi (2003) examined the influence of trust signs which were defined as the "web users' perception about assurance of their privacy" on the integrity of the e-vendor and found a positive influence. Based on this, the three sub-hypotheses relating to privacy are:

- H3d The privacy attitudes of the website are not significantly related to the integrity of the e-vendor.
- H3e The privacy attitudes of the website are not significantly related to the benevolence of the e-vendor.
- H3f The privacy attitudes of the website are not significantly related to the ability of the e-vendor.

#### *2.6.4 Fourth hypothesis*

Customer satisfaction is necessary for attracting customers in the first place, and secondly, maintaining them. No business can survive without meeting customers' expectations. High level of satisfaction is established when the brand fulfils the needs of customers far more than the rival's brands (Hanif et al., 2010). Additionally, customer orientation is a key player in determining the success of the retailing business (Tajeddini et al., 2013), particularly that constantly changing retailing environment (Stan and Evans, 2000). Therefore, being customer-oriented, enhances customer satisfaction (Dowling and Pfeffer, 1975). Several studies support that customer satisfaction is essential to improve the business' profitability (Cengiz, 2010; Zhang and Pan, 2009) which is a major goal for any business.

Customer satisfaction has been studied as an antecedent for loyalty (Anderson and Swaminathan, 2011; Cyr, 2008; Eid, 2011; Kim et al., 2009b); as an outcome of trust (Lin, 2007) and as a determinant for TRST environment as well. Chen (2007) tested the influence of CSF on trust, the results indicated that there is a positive influence of CSF on trust. Flavián et al. (2006) observed that as levels of customers' satisfaction improved, as did trust levels in the website. Similarly, customers' satisfaction positively affects trust in websites hosting consumer-generated content (Filieri et al., 2015). Customer satisfaction is the key determinant to consumer loyalty, trust and a repurchase behaviour (Ali and Sankaran, 2010). According to Ha and Akamavi (2009), prior affective experience with an e-vendor affects trust level which in turn plays a vital role in facilitating customers' future repurchase intentions. Hence, in trust building process, customers should not only perceive positive outcomes, rather they should also believe that these outcomes will continue in the future (Wah Yap et al., 2012). Customer satisfaction can lead to trust, then to a repurchase decision (Ganiyu et al., 2012), or to customer retention (Danesh et al., 2012). In the same context, a positive strong relationship between customer satisfaction and customer trust is found in banking industry in Sri Lanka (Leninkumar, 2017), and in local store brands in South Africa (Chinomona and Dubihlela, 2014). Furthermore, in the medical tourism industry, it has been found that customer satisfaction leads to trust in both staff and clinic (Han and Hyun, 2015).

Accordingly, the forth hypothesis is formulated as follows.

- H4 CSF has no significant influence on buyers' TRST in Palestine.

The ability of the e-vendor to adapt or to customise the products according to customers' needs and desires could promote trust (Komiak and Benbasat, 2006). This is because the perception of an e-vendor willingness to offer customised products forms a basis for believing in his/her ability and integrity (Komiak and Benbasat, 2006; Mou and Cohen, 2015). In addition, adaptation to customers' needs through customising products may enhance customers' beliefs in the benevolence of the firm (Sirdeshmukh et al., 2002).

Similarly, Koufaris and Hampton-Sosa (2004) believed that the willingness to customise products and services can significantly affect consumers' initial trust. Based on this, the following sub-hypotheses are formulated.

- H4a The adaptation of products and services in the website is not significantly related to the integrity of the e-vendor.
- H4b The adaptation of products and services in the website is not significantly related to the benevolence of the e-vendor.
- H4c The adaptation of products and services in the website is not significantly related to the ability of the e-vendor.

Commitment as a component of customer satisfaction refers to the strength of the relationship between the customers and e-vendor. From the e-vendor side, commitment has two aspects; ensuring that there is no breakdown in the services provided to the customers, and the responsiveness to customers, complaints and concerns (Anderson and Swaminathan, 2011). The importance of being committed to the customers has been highlighted by different scholars (Boulding et al., 1993). By doing so, the higher level of commitment towards customers, yields a higher level of satisfaction among customers, thus this will encourage customers to deal again with the same e-vendor, and ultimately helps in enhancing trust and loyalty. When the e-vendors satisfy the needs of their customers and understand targeted buyers now and in the future superior value is created (Tajeddini, 2015a). This orientation could be explained by the buyers as cues for the integrity, benevolence and ability of the e-vendor. Particularly, the analysis of website users' needs is not an easy task, therefore it is expected that their belief in the e-vendor's integrity, benevolence and ability increases. When an e-vendor fulfils its commitments to the customers, trust is spawned (Casaló et al., 2007). Based on the above, the three sub-hypotheses relating commitment to trust components are given below.

- H4d E-vendor commitment to the customers is not significantly related to the integrity of the e-vendor.
- H4e E-vendor commitment to the customers is not significantly related to the benevolence of the e-vendor.
- H4f E-vendor commitment to the customers is not significantly related to the ability of the e-vendor.

The availability of a social network through which customers can communicate and share opinions about the products and services is becoming increasingly common in daily life (Sridhar Balasubramanian, 2001). Due to the popularity of social network, commercial enterprises have exploited their potential to deliver their services (Nepal et al., 2013). It is known in literature that social communities can increase trust (Özer and Zheng, 2017; Shadkam and O'Hara, 2011; Gefen and Straub, 2004). Sociologists believe that personal relationships' networks have a major role in establishing trust (Özer and Zheng, 2017). Therefore, network availability in an e-vendor website can enhance trust for several reasons. First, the ability of customers to exchange opinions and experiences reflects that the e-vendor is not hiding any of other customers' experiences which could be explained as a cue of confidence of his/her services, transactions and abilities. Second, when customers read other customers' comments about the products they already received and to what level do these purchases match the prescribed features of the products on the



website, they can judge the benevolence and the honesty of the e-vendor. Third, beside the fact that these network can help in creating a wider base of customers, the e-vendor can benefit from the discussions among the members as well, the e-vendor can reinforce actions that derive satisfaction and avoid actions that derive dissatisfaction (Schubert and Ginsburg, 2000), and thus trust level is enhanced. Sharing these experiences can reinforce purchasing decisions and trust level especially for first time customers. Customers in general appreciate the sites that provide such communities or network (Lu et al., 2010). Gefen and Straub (2004) found a positive influence of social presence on the integrity and benevolence dimensions of trust. Hence, the following three sub-hypotheses are proposed.

H4g Network availability in the website is not significantly related to the integrity of the e-vendor.

H4h Network availability in the website is not significantly related to the benevolence of the e-vendor.

H4i Network availability in the website is not significantly related to the ability of the e-vendor.

Product assortment is the last component of customer satisfaction. Customers trust the e-vendor to the extent they have a satisfactory image of products assortment (Guenzi et al., 2009), thus uncertainty level decreases while shopping in the site (Chiou and Droge, 2006). Product assortment that is based on the desires and expectations of the customers has a positive significant influence on customer satisfaction resulting in the creation of long-term relation with the customers and consequently they become loyal (Mullick, 2014), as well as on customers' trust in the e-vendor (Kim et al, 2013). Customers judge a company's trustworthiness based on their perception of the abilities of the company in conducting its activities and tasks (Morgan and Hunt, 1999). The abilities and competencies of the e-vendors are of two types; observable and unobservable competencies. The observable competencies are cues for the unobservable competencies. Therefore, when they are satisfied with observable competencies as product assortment, this represents a cue for the unobservable competencies. Ultimately, they are satisfied with and trusting his abilities. Based on that, the following hypotheses are formulated.

H4j Products assortment is not significantly related to the integrity of the e-vendor.

H4k Products assortment is not significantly related to the benevolence of the e-vendor.

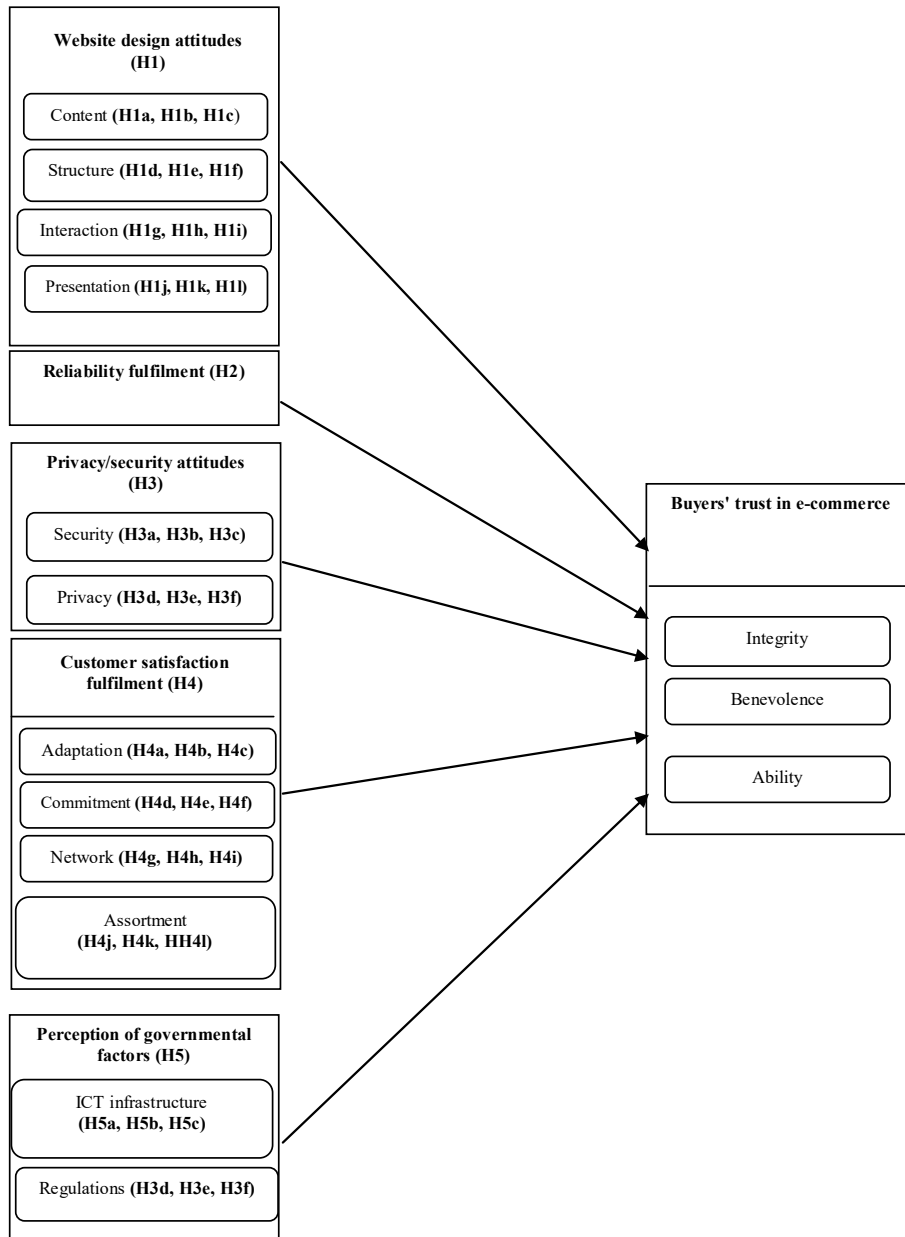
H4l Products assortment is not significantly related to the ability of the e-vendor.

### *2.6.5 Fifth hypothesis*

The role of the government in developing countries is essential in facilitating the requirements for the e-commerce development process implemented in providing secure online payment options, ensuring the availability of a solid ICT infrastructure, and the issuing of the relevant regulations (Kabango and Asa, 2015). Similarly, Yaseen et al. (2015) stated that the government role is crucial to provide a secure infrastructure to facilitate the adoption of e-commerce and increase the level of trust and confidence among customers. In Japan, the governmental role in reducing prices of computers, ISP,

Telecom fees helped in increasing the rate of the internet users which has helped in the wide spread of e-commerce (Fitzsimmons and Okada, 2002).

**Figure 1** The research model



The results of AlGhamdi et al. (2011) and Eid (2011) studies show that the government’s promotion and support of e-commerce is a crucial factor. AlGhamdi et al. (2011) summarised the environmental issues that promote e-commerce and help in building trust

including ICT infrastructure, the degree of credit cards penetration, online payment mechanisms, legislative and regulatory framework, logistics infrastructure and education and awareness. In the same manner, Eid (2011) emphasised the importance of the governmental role in facilitating some basic facilities as house addressing and numbering which is important to guarantee the accurate delivery of products.

Ghoneim et al. (2000) pointed the importance of the governmental role in encouraging e-commerce and building trust among the Egyptian citizens towards it. The Egyptian Government has taken a number of actions including issuing the new property rights law which addresses concerns of stakeholders associated with e-commerce, providing the required infrastructure, and adapting the relevant regulatory framework that helps in building trust among buyers and sellers. Aghdaie et al. (2011) found governmental factors to be influential on customers' trust attitudes. Similarly, Najafi and Kahani (2016) indicated that technical and infrastructure readiness, and legal and laws readiness were among the factors affecting e-trust level by 12%, and 16%, respectively. Government regulations as an element of environmental factors affect customers TRST (Kim et al., 2005). In addition, Malaysian Government needs to provide a baseline for customers' protection to ensure the effectiveness of e-commerce industry and consequently strengthen customers' confidence and trust (Nair, 2010). Therefore, to assess the impact of governmental factors on consumers TRST, the following hypothesis is formulated.

H5 PGF has no significant influence on buyers' TRST in Palestine.

Customers are willing to trust e-vendor if they believe that required structural conditions are met (McKnight et al., 2002). These include legal protections, legal regulations, legal recourse or any other procedures that guarantee the trustworthiness of the environment (Shapiro, 1987). The availability of such structures would help in making customers believe that, in general e-vendors in the online environment have the attributes of ability, benevolence, and integrity. Particularly that the availability of regulations protects the rights of all parties involved in e-transactions, hence encouraging customers to deal more freely in online shopping and trusting the e-vendors. This is because they know that the e-vendors have to do business with them honestly under the umbrella of law and keep his/her promises and held agreement with the customers; otherwise, the e-vendors are subjected to legal accountability. Similarly, having a reliable and supportive ICT infrastructure is the corner stone for establishing trust in e-environment; in order to keep his/her promises towards the customers, the e-vendor relies on the ICT infrastructure in delivering the purchases, having the website functioning all the time with no breakdowns, and for offering a broader coverage of internet services to reach more customers. Thus, obviously the ICT infrastructure directly influences e-vendor integrity, benevolence and ability. On the other hand, regulations are as important as the ICT infrastructure in reinforcing trust. Based on this, the following sub-hypotheses are to be tested.

H5a Perception of ICT infrastructure readiness is not significantly related to the integrity of the e-vendor.

H5b Perception of ICT infrastructure readiness is not significantly related to the benevolence of the e-vendor.

H5c Perception of ICT infrastructure readiness is not significantly related to the ability of the e-vendor.

- H5d Perception of e-commerce regulations is not significantly related to the integrity of the e-vendor.
- H5e Perception of e-commerce regulations is not significantly related to the benevolence of the e-vendor.
- H5f Perception of e-commerce regulations is not significantly related to the ability of the e-vendor.

### 2.7 Proposed e-commerce trust model

Based on the above discussion, the model shown in Figure 1 is proposed. This model has been constructed depending mainly on models of Chen (2007) and Yahya et al. (2015). The dependent variable of this study is TRST, and the independent variables are WSDA, reliability fulfilment, SPA and CSF taken from Chen (2007) and the fifth independent variable is governmental policies taken from Yahya et al. (2015). The justification for using Chen model in this study is that the factors used in it contain most of the variables that have been studied in other models. While the adoption of the fifth independent factor from Yahya et al. (2015) is that their study was conducted in the Arab world context. The current research model consists of five main constructs, which are delineated into 15 measurable variables.

## 3 Research methodology

This research aims to study, explain and analyse the factors influencing online buyers' TRST in Palestine using a quantitative approach to measure the influence of independent variables on the dependent variable. The reason for selecting the quantitative approach is that this study is deductive in its nature. The population of this research is the employees in Palestine who have experienced the online shopping, or who have interest in online purchasing. Due to the lack of reliable formal statistics about the numbers of internet shopping users among the Palestinian employees, the population of the study was calculated using the statistics related to the Palestinian employees and the pre-mentioned percentage (0.5%) of internet shopping users among the Palestinian citizens. Therefore, based on the latest statistics released by the PCBS about the numbers of employees in West Bank the number is 845,700, and by multiplying this number by 0.5% we get the population size of the study which is 4,429. The required sample size needed to be drawn from this population so that the results could be generalised on the population at a level of confidence of 95%, and error margin of 5% can be calculated using equation (1) adopted from Daniel and Cross (2013) as follows.

$$n = \frac{Nz^2 pq}{d^2(N-1) + z^2 pq} \quad (1)$$

where  $n$  is the sample size,  $N$  is the population size,  $z = 1.96$  corresponding to a 95% confidence level,  $p$  is the percentage picking a choice from the population, when  $p = 0.5$  the largest possible sample size is produced,  $q = 1 - p = 0.5$ , and  $d$  is the acceptable error margin (5%). Substituting all of these values in the equation yields  $n = 354$ .

In order to collect the required data, a five point Likert scale (1: strongly disagree, 2: disagree, 3: neutral, 4: agree and 5: strongly agree) questionnaire was designed. The questionnaire was distributed in two forms; electronic and paper. The measurements were adopted from available literature in the field. There were 358 valid questionnaires for data analysis.

### 3.1 Reliability and validity

Cronbach's alpha is a common approach for measuring the internal consistency of the measures (reliability). The overall Cronbach's alpha for the whole questionnaire was 88.91%, this means that if this survey is to be distributed to another sample, the probability of achieving the same results would be 88.91%. The Cronbach's alpha values of questionnaire main items as well as the overall Cronbach's alpha are given in Table 2. The acceptable value of Cronbach's alpha is 0.6 (Corbitt et al., 2003; George and Mallery, 2003; Malhotra and Grover, 1998). The values of Cronbach's alpha were higher than the acceptable level for WSDA, RLI, PGF, and almost acceptable for SPA and CSF. Joppe (2000) defined validity in quantitative research as whether the research instrument measures what it is intended to be measured. In this research, content validity was tested by showing the questionnaire to seven different arbitrators who evaluated the survey items, the judges' comments were taken into consideration through the process of designing the survey.

**Table 2** Cronbach's alpha values of the questionnaire items

<i>Independent construct</i>	<i>Cronbach's alpha</i>
Website design attitudes (WSDA)	0.7064
Reliability fulfilment (RF)	0.7807
Security and privacy attitudes (SPA)	0.5932
Customer satisfaction fulfilment (CSF)	0.5868
Perception of governmental factors (PGF)	0.9308
Trust in e-commerce (TRST)	0.8121
<i>Overall</i>	<i>0.8891</i>

### 3.2 Sample characteristics

Five demographic characteristics were considered in the study; gender, age, educational level, shopping experience duration, and ownership or access to electronic payment cards or accounts. Out of the 358 valid surveys, there were 208 (58.10%) male and 150 (41.9%) female respondents. Regarding age, the largest number of participants according to age was in the age category of 24–30 years with 113 participants, forming 31.57% of the participants, followed by 18–23 years category with 107 participants (29.88%). The number of participants in the age category of 31–40 years was 97 participants (27.09%), and the age category of 41–50 years has 30 participants (8.37%), finally, the smallest age category was for the participants aged more than 50 years with only 11 participants (3.0%). On the other hand, relating to education, the bachelor degree holders were the largest sector with 193 participants (53.91%), next was the category of participants with higher education certificate of

100 participants (27.93%). Followed by diploma holders with 49 participants (13.68%), high school degree holders were 12 participants (3.35%), and finally participants with less than high school degree were the smallest sector with four participants (1.1%).

With regard to shopping experience, the respondents with experience less than one year were the highest sector with 128 participants forming (35.75%), followed by respondents with 1–2 years shopping experience with 121 participants (33.8%); the participants with experience of 3–5 years were 65 participants forming (18.16%), whereas the smallest sector was for the participants whom shopping experience is more than five years with only 44 participants (12.29%). This could be attributed to the recent use of the e-commerce in Palestine in general, and because of the young age of most participants. The number of participants who owned or had access to cards' accounts was 271, forming 75.69% of the sample, and 87 (24.31%) participants did not own or have the access and pay directly when they receive their purchases. Table 3 summarises the descriptive statistics of the demographic variables of the study sample.

**Table 3** Demographic characteristics of the study sample

<i>Characteristics</i>	<i>Respondents</i>	<i>Frequency</i>	<i>Percent</i>
Gender	Male	208	58.1
	Female	150	41.9
	<i>Total</i>	358	100.0
Age	18–23 years	107	29.88
	24–30 years	113	31.56
	31–40 years	97	27.1
	41–50 years	30	8.38
	> 50 years	11	3.08
	<i>Total</i>	358	100.0
Educational level	Less than high schools	4	1.1
	High schools	12	3.38
	Diploma	49	13.68
	Bachelor	193	53.91
	Higher education	100	27.93
	<i>Total</i>	358	100.0
Shopping experience	Less than one year	128	35.75
	1–2 years	121	33.8
	3–5 years	65	18.16
	More than five years	44	12.29
	<i>Total</i>	358	100.0
Accessibility to electronic cards	Have accessibility	271	75.69
	Do not have accessibility	87	24.31
	<i>Total</i>	358	100.0

## 4 Data analysis and interpretation

The current study employs Minitab Software Package 16.1 for data analysis and Pearson correlation coefficient is used for hypotheses' testing.

### 4.1 Main hypotheses testing

The correlation coefficients between the independent constructs and the dependent construct were calculated as shown in Table 4.

**Table 4** Correlation coefficients between independent constructs and dependent construct

Hypothesis	Effect	<i>r</i>	<i>P-value</i> <sup>1</sup>	Decision
H1	Website design attitudes (WSDA) → trust	0.127*	0.016	Not supported
H2	Reliability fulfilment (RLI) → trust	0.009	0.870	Supported
H3	Security and privacy attitudes (SPA) → trust	0.131*	0.013	Not supported
H4	Customer satisfaction fulfilment (CSF) → trust	0.341*	0.000	Not supported
H5	Perception of governmental factors (PGF) → trust	0.433*	0.000	Not supported

Notes: <sup>1</sup>Level of significance  $\alpha = 0.05$ ; \*significant at  $\alpha = 0.05$ ; *r*: Pearson correlation coefficient.

#### 4.1.1 Interpretation

- 1 WSDA and TRST are significantly correlated at (5% level of significance) with ( $r = 0.127$ ). This shows that the increase in WSDA also increases TRST. Thus, null hypothesis (*H1*) is rejected and the alternative hypothesis is accepted.
- 2 RLI and TRST are not significantly correlated at (5% level of significance) with ( $r = 0.009$ ). Thus, the null hypothesis (*H2*) is failed to be rejected by the data.
- 3 SPA and TRST are significantly correlated at (5% level of significance) with ( $r = 0.131$ ). This shows that the increase in SPA also increases TRST. Thus, null hypothesis (*H3*) is rejected and the alternative hypothesis is accepted.
- 4 CSF and TRST are significantly correlated at (5% level of significance) with ( $r = 0.341$ ). This shows that the increase in CSF also increases TRST. Thus, null hypothesis (*H4*) is rejected and the alternative hypothesis is accepted.
- 5 PGF and TRST are significantly correlated at (5% level of significance) with ( $r = 0.433$ ). This shows that the increase in PGF also increases TRST. Thus, null hypothesis (*H5*) is rejected and the alternative hypothesis is accepted.

These findings match previous literature findings related to these factors (Aghdaie et al., 2011; Al-dweeri et al., 2017, Bartikowski and Singh, 2014; Chen, 2007; Najafi and Kahani, 2016; Wang et al., 2016) except for reliability fulfilment. Most of the available literature found that reliability fulfilment is a major antecedent of trust (namely, Bart

et al, 2005; Kim et al., 2009b). Several reasons may cause this insignificance. First, lack of awareness among buyers in Palestine about the importance of reliability of the online vendors. Second, according to Miyazaki and Fernandez (2001) shopping experience has two components; duration and frequency. The majority of the respondents in this study have relatively short online shopping experience, thus they are either unfamiliar enough with the importance of the reliability of the e-vendor, or the number of their purchases is relatively small which in turn was not sufficient to measure the reliability of the e-vendor. Familiarity with the e-vendor and purchasing experience enhances the buyer's TRST (Shergill and Chen, 2005). Finally, some respondents may attribute the delay in delivering the purchases to other causes like the difficulties in transport due to the barriers imposed by the Israeli authorities to be related to online vendor reliability.

#### 4.2 Sub-hypotheses testing

Similarly, the Pearson correlation coefficients between independent sub-factors and trust sub-factors were used for the sub-hypotheses testing are illustrated in Table 5, Table 6, and Table 7).

##### 4.2.1 Interpretation

- 1 The content of the website, security attitudes, adaptation, commitment, assortment, ICT infrastructure and regulations are significantly correlated with the integrity of the e-vendor at 5% level of significance. Thus, *H1a*, *H3a*, *H4a*, *H4d*, *H4j*, *H5a* and *H5d* are rejected by the data, whereas *H1d*, *H1g*, *H1j*, *H3d* and *H4g* are failed to be rejected by the data. From these results, the integrity of the e-vendor is mainly influenced by regulations and ICT infrastructure with the highest correlations coefficients ( $r$ ) of (0.432 and 0.401, respectively). Followed by the level of commitment of the e-vendors towards the customers with ( $r = 0.257$ ), then the ability to adapt to customers' needs comes third with ( $r = 0.21$ ). Assortment of products comes next with ( $r = 0.177$ ), security level has a correlation coefficient of ( $r = 0.137$ ) with the e-vendor integrity, and the last significant correlation is between content and integrity with ( $r = 0.104$ ). On the other hand, structure, interaction, presentation, privacy attitudes, and the availability of network have no influence on the e-vendor integrity.
- 2 The content and presentation of the website, security, privacy, adaptation, commitment, network, assortment, ICT infrastructure and regulations are significantly correlated with the benevolence of e-vendor. These findings indicate that hypotheses *H1b*, *H1k*, *H3b*, *H3e*, *H4b*, *H4e*, *H4h*, *H4k*, *H5b*, and *H5e* are rejected; whereas *H1e* and *H1h* are failed to be rejected by the data. The benevolence of the e-vendor is mainly influenced by regulations ( $r = 0.359$ ), commitment towards customers ( $r = 0.311$ ), ICT infrastructure ( $r = 0.299$ ), adaptation ( $r = 0.259$ ) and security with ( $r = 0.20$ ). Assortment comes then with ( $r = 0.188$ ), followed by content with ( $r = 0.172$ ). Presentation and network have the same value of correlation coefficient ( $r = 0.158$ ), whereas the last significant factor is privacy attitudes with ( $r = 0.122$ ). The other two factors structure and interaction have no significant influence on the benevolence of the e-vendor.



- 3 All sub-factors except for the structure of the website are correlated with the ability of the e-vendor, hence, hypotheses *H1c*, *H1i*, *H1l*, *H3c*, *H3f*, *H4c*, *H4f*, *H4i*, *H4l*, *H5c*, and *H5f* are rejected, whereas *H1f* is failed to be rejected by the data. Like integrity and benevolence, regulation has the highest influence on e-vendor ability as well with ( $r = 0.331$ ). Next is assortment with ( $r = 0.302$ ), followed by ICT infrastructure and security with almost equal values ( $r = 0.254$  and  $r = 0.252$ ). Commitment towards customers comes next with ( $r = 0.188$ ), then network ( $r = 0.18$ ), adaptation ( $r = 0.177$ ), privacy ( $r = 0.167$ ), presentation ( $r = 0.157$ ), interaction ( $r = 0.129$ ) and finally content with ( $r = 0.126$ ). The only common insignificant factor with integrity and benevolence is structure with ( $r = 0.007$ ).

**Table 5** Sub-hypotheses testing result of the integrity dimension of trust of the e-vendor

	<i>Independent sub-factor</i>	<i>r</i>	<i>P-value</i> <sup>1</sup>	<i>Decision</i>
Website design attitudes (H1)	Content <i>H1a</i>	0.104*	0.049	Not supported
	Structure <i>H1d</i>	0.06	0.252	Supported
	Interaction <i>H1g</i>	0.013	0.799	Supported
	Presentation <i>H1j</i>	0.083	0.114	Supported
Security and privacy (H3)	Security <i>H3a</i>	0.137*	0.009	Not supported
	Privacy <i>H3d</i>	0.059	0.261	Supported
Customer satisfaction fulfilment (H4)	Adaptation <i>H4a</i>	0.21*	0.000	Not supported
	Commitment <i>H4d</i>	0.257*	0.000	Not supported
	Network <i>H4g</i>	0.1	0.057	Supported
	Assortment <i>H4j</i>	0.177*	0.001	Not supported
Perception of governmental factors (H5)	ICT infrastructure <i>H5a</i>	0.401*	0.000	Not supported
	Regulations <i>H5d</i>	0.432*	0.000	Not supported

Notes: <sup>1</sup>Level of significance  $\alpha = 0.05$ ; \*significant at  $\alpha = 0.05$ ; *r*: Pearson correlation coefficient.

**Table 6** Sub-hypotheses testing result of the benevolence dimension of trust of the e-vendor

	<i>Independent sub-factor</i>	<i>r</i>	<i>P-value</i> <sup>1</sup>	<i>Decision</i>
Website design attitudes (H1)	Content <i>H1b</i>	0.172*	0.001	Not supported
	Structure <i>H1e</i>	0.079	0.133	Supported
	Interaction <i>H1h</i>	0.007	0.901	Supported
	Presentation <i>H1k</i>	0.158*	0.003	Not supported
Security and privacy (H3)	Security <i>H3b</i>	0.200*	0.000	Not supported
	Privacy <i>H3e</i>	0.122*	0.021	Not supported
Customer satisfaction fulfilment (H4)	Adaptation <i>H4b</i>	0.259*	0.000	Not supported
	Commitment <i>H4e</i>	0.311*	0.000	Not supported
	Network <i>H4h</i>	0.158*	0.003	Not supported
	Assortment <i>H4k</i>	0.188*	0.000	Not supported
Perception of governmental factors (H5)	ICT infrastructure <i>H5b</i>	0.299*	0.000	Not supported
	Regulations <i>H5e</i>	0.359*	0.000	Not supported

Notes: <sup>1</sup>Level of significance  $\alpha = 0.05$ ; \*significant at  $\alpha = 0.05$ ; *r*: Pearson correlation coefficient.

**Table 7** Sub-hypotheses testing result of the ability dimension of trust of the e-vendor

	<i>Independent sub-factor</i>	<i>r</i>	<i>P-value</i> <sup>1</sup>	<i>Decision</i>
Website design attitudes (H1)	Content <i>H1c</i>	0.126*	0.017	Not supported
	Structure <i>H1f</i>	0.007	0.880	Supported
	Interaction <i>H1i</i>	0.129*	0.014	Not supported
	Presentation <i>H1l</i>	0.157*	0.003	Not supported
Security and privacy (H3)	Security <i>H3c</i>	0.252*	0.000	Not supported
	Privacy <i>H3f</i>	0.167*	0.001	Not supported
Customer satisfaction fulfilment (H4)	Adaptation <i>H4c</i>	0.177*	0.000	Not supported
	Commitment <i>H4f</i>	0.188*	0.000	Not supported
	Network <i>H4i</i>	0.18*	0.001	Not supported
	Assortment <i>H4l</i>	0.302*	0.000	Not supported
Perception of governmental factors (H5)	ICT infrastructure <i>H5c</i>	0.254*	0.000	Not supported
	Regulations <i>H5f</i>	0.331*	0.000	Not supported

Notes: <sup>1</sup>Level of significance  $\alpha = 0.05$ ; \*significant at  $\alpha = 0.05$ ; *r*: Pearson correlation coefficient.

### 4.3 Regression models

Further examination was performed using regression analysis to estimate the relative influence of each of the independent constructs on the dependent construct. As well as estimating relative influence of each of the independent factors on the dependent factors.

#### 4.3.1 Main regression model for TRST

Different attempts were undertaken to build the regression model that represents the best fit for the data. The first regression model was a first-degree polynomial between the four significant constructs WSDA, SPA, CSF, PGF and trust. The model was significant ( $df = 4$ ,  $F = 35.24$ ,  $P\text{-value} = 0$ ) and could explain about 28.54% of the variance in TRST ( $R^2 = 28.54\%$ ). The regression equation of the model was given by

$$\text{TRST} = -5.35955 + 0.0177498 \text{ WSDA} + 1.25065 \text{ SPA} + 1.74788 \text{ CSF} + 2.2589 \text{ PGF} \quad (2)$$

The highest effect was for the PGF ( $\beta = 2.2589$ ,  $P\text{-value} = 0$ ), followed by CSF ( $\beta = 1.74788$ ,  $P\text{-value} = 0.001$ ), then SPA ( $\beta = 1.25065$ ,  $P\text{-value} = 0.027$ ) and lastly WSDA ( $\beta = 0.0177498$ ,  $P\text{-value} = 0.974$ ).

In this model, all predictors were significant except for WSDA, thus a modified model using the three significant predictors only was considered. The modified model was significant ( $df = 3$ ,  $F = 47.11$ ,  $P\text{-value} = 0$ ) with  $R^2 = 28.53\%$ . The regression equation of this model was as shown in equation (3):

$$\text{TRST} = -5.32301 + 1.25611 \text{ SPA} + 1.7524 \text{ CSF} + 2.258 \text{ PGF} \quad (3)$$

The highest effect was for the PGF ( $\beta = 2.25845$ ,  $P\text{-value} = 0$ ), followed by CSF ( $\beta = 1.7524$ ,  $P\text{-value} = 0.001$ ), then SPA ( $\beta = 1.25611$ ,  $P\text{-value} = 0.02$ ). The  $R^2$  value of this model is almost the same as that of the original model, which means that these three

predictors contribute approximately 100% of the model significance, and that the addition or removal of the WSDA does not have a significant contribution. Based on these results, it is believed that the first-degree polynomial with three predictors is the best model that fit the data. Table 8 and Table 9 summarise these regression models.

**Table 8** Multiple regression model of TRST using four independent constructs

<i>Independent variable</i>	<i>Value of <math>\beta</math> coefficient</i>	<i>Standard error of the coefficient</i>	<i>T value</i>	<i>p-value</i>	<i>VIF</i>
Constant	-5.35955	2.45852	2.1799	0.03	
WSDA	0.0177	0.54861	0.0324	0.974	1.3700
SPA	1.250	0.56351	2.2194	0.027	1.5543
CSF	1.747	0.54043	3.2342	0.001	1.6205
PGF	2.25	0.25862	8.7343	0	1.0898
Models' F-value	35.24			0.0	
R <sup>2</sup>	28.54%				
R <sup>2</sup> adjusted	27.73%				

Note: Level of significance  $\alpha = 0.05$ .

**Table 9** Multiple regression model of TRST using three independent constructs

<i>Independent variable</i>	<i>Value of <math>\beta</math> coefficient</i>	<i>Standard error of the coefficient</i>	<i>T value</i>	<i>p-value</i>	<i>VIF</i>
Constant	-5.32301	2.18063	2.4410	0.015	
SPA	1.2561	0.53695	2.3393	0.02	1.4152
CSF	1.7524	0.52133	3.3614	0.001	1.5123
PGF	2.2585	0.25790	8.7572	0	1.0868
Models' F-value	47.11			0.0	
R <sup>2</sup>	28.53%				
R <sup>2</sup> adjusted	27.93%				

Note: Level of significance  $\alpha = 0.05$ .

#### 4.3.2 Sub-factors regression models

Three regression models were built for the three components of trust; integrity, benevolence and ability in the same manner of the main regression models.

- Integrity regression model

The first-degree polynomial of integrity with the seven significant factors had an  $R^2$  value of 25.11%, which means that 25.11% of the variations in the integrity of the e-vendor could be attributed to these seven predictors. Among these seven factors, regulation, commitment and ICT had the highest effect. Therefore, a second attempt was undertaken to build a model using these three factors only. Equation (4) illustrates the regression equation.

$$\begin{aligned} \text{Integrity} = & 1.67474 + 0.644997 \text{ Regulation} \\ & + 0.549659 \text{ Commitment} + 0.272571 \text{ ICT} \end{aligned} \quad (4)$$

The highest effect was for regulation ( $\beta = 0.644997$ ,  $P\text{-value} = 0$ ), followed by commitment ( $\beta = 0.549659$ ,  $P\text{-value} = 0$ ), and lastly ICT ( $\beta = 0.272571$ ,  $P\text{-value} = 0$ ). The P-value of this model was 0.0, and F-test was 36.65 reflecting the significance of the model. In addition, the  $R^2$  value of this model is 23.04%. This value is close to the  $R^2$  of the original model, and the difference is not large enough to justify the use of a complex model of seven predictors. In addition, these three predictors contribute about 91.7% to the model significance. Therefore, it is considered the best fit.

- Benevolence regression model

The first-degree polynomial of benevolence used the ten significant factors. The  $R^2$  value of this model was 22.31%, which means that 22.31% of the variations in the benevolence of the e-vendor could be attributed to these ten predictors. Among these ten factors, only three predictors had the highest effect namely, security, commitment and regulation. Therefore, a second attempt was undertaken to build a model using these three factors only. Equation (5) illustrates the regression equation.

$$\text{BEN} = 1.16302 + 0.169948 \text{ Security} + 0.254866 \text{ Commitment} + 0.257208 \text{ Regulation} \quad (5)$$

The highest effect was for regulation and commitment with approximately equal values regulation ( $\beta = 0.257208$ ,  $P\text{-value} = 0$ ), and commitment ( $\beta = 0.254866$ ,  $P\text{-value} = 0$ ), and lastly security ( $\beta = 0.169948$ ,  $P\text{-value} = 0$ ). The P-value of this model was 0.0, and F-test was 30.84 reflecting the significance of the model. In addition, the  $R^2$  value of this model is 20.72%. This value is close to the  $R^2$  of the original model, and the difference is not large enough to justify the use of a complex model of seven predictors. In addition, these three predictors contribute about 92.8% to the model significance. Therefore, it is considered the best fit.

- Ability regression model

The first-degree polynomial of ability used the eleven significant factors. The  $R^2$  value of this model was 24.35%, which means that 24.35% of the variations in the ability of the e-vendor could be attributed to these eleven predictors. Among these eleven factors, only four predictors had the highest effect namely, security, assortment, adaptation and regulation. Therefore, a second attempt was undertaken to build a model using these four factors only. Equation (6) illustrates the regression equation.

$$\text{Ability} = -5.98847 + 2.06396 \text{ Security} + 2.33612 \text{ Assortment} - 0.846288 \text{ Adaptation} + 1.82882 \text{ Regulation} \quad (6)$$

The highest effect was for assortment ( $\beta = 2.33612$ ,  $P\text{-value} = 0$ ), followed by security ( $\beta = 2.06396$ ,  $P\text{-value} = 0$ ), then regulation ( $\beta = 1.82882$ ,  $P\text{-value} = 0$ ) and lastly adaptation ( $\beta = 0.846288$ ,  $P\text{-value} = 0$ ). The P-value of this model was 0.0, and F-test was 26.68 which reflect its significance. In addition, the  $R^2$  value of this model is 23.21%. This value is close to the  $R^2$  of the original model, and the difference is not large enough to justify the use of a complex model of seven predictors. In addition, these three predictors contribute about 95.3% to the model significance. Therefore, it is considered the best fit. Table 10, Table 11 and Table 12 summarise the details of the previously-mentioned three regression models.

**Table 10** Multiple regression models of the integrity of the e-vendor

<i>Independent variable</i>	<i>Value of <math>\beta</math> coefficient</i>	<i>Standard error of the coefficient</i>	<i>T value</i>	<i>p-value</i>	<i>VIF</i>
Constant	1.67474	0.596963	2.8054	0.005	
Infrastructure (ICT)	0.272571	0.154240	1.7672	0.07	2.54421
Commitment	0.549659	0.142716	3.8514	0	1.03942
Regulations	0.644997	0.155063	4.1596	0	2.54097
Models' F-value	36.65			0.0	
R <sup>2</sup>	23.04%				
R <sup>2</sup> adjusted	23.06%				

Note: Level of significance  $\alpha = 0.05$ .

**Table 11** Multiple regression models of the benevolence of the e-vendor

<i>Independent variable</i>	<i>Value of <math>\beta</math> coefficient</i>	<i>Standard error of the coefficient</i>	<i>T value</i>	<i>p-value</i>	<i>VIF</i>
Constant	1.16302	0.328967	3.53536	0.000	
Security	0.169948	0.067994	2.49947	0.013	1.0972
Commitment	0.254866	0.058891	4.32774	0	1.1332
Regulations	0.257208	0.039103	6.57772	0	1.0346
Models' F-value	30.84			0.0	
R <sup>2</sup>	20.72%				
R <sup>2</sup> adjusted	20.05%				

Note: Level of significance  $\alpha = 0.05$ .

**Table 12** Multiple regression models of the ability of the e-vendor

<i>Independent variable</i>	<i>Value of <math>\beta</math> coefficient</i>	<i>Standard error of the coefficient</i>	<i>T value</i>	<i>p-value</i>	<i>VIF</i>
Constant	-5.98847	2.44767	-2.44661	0.015	
Security	2.06396	0.48740	4.23463	0	1.1696
Adaptation	-0.846288	0.49552	-1.70787	0.08	1.4687
Assortment	2.33612	0.46419	5.03263	0	1.3295
Regulations	1.82882	0.27434	6.66630	0	1.0564
Models' F-value	26.68			0.0	
R <sup>2</sup>	24.35%				
R <sup>2</sup> adjusted	22.34%				

Note: Level of significance  $\alpha = 0.05$ .

#### 4.4 Statistical differences with respect to demographic factors

Normality check of the data showed that the data was not normally-distributed, so Box-Cox transformation was used to transform the data into normally-distributed data. Then, two nonparametric tests were used. Kruskal-Wallis test for differences according to

age, educational level and shopping experience; Mann-Whitney test for differences according to gender and accessibility to electronic payment cards. Data showed that there were no statistical differences at 5% level of significance according to age ( $P$ -value = 0.567), educational level ( $P$ -value = 0.134) and shopping experience duration ( $P$ -value = 0.248) among the respondents. On the other hand, there were statistical differences based on the gender ( $P$ -value = 0.0005) and accessibility to electronic card account ( $P$ -value = 0.0095). Specifically, male users tend to trust more in e-commerce in Palestine compared to female users, and respondents with access to electronic card account trust e-commerce in Palestine more than those who do not have access.

## 5 Findings and discussions

The findings revealed that TRST in Palestine is mainly influenced by three independent constructs; governmental factors, security and privacy attitudes and CSF. PGF has the strongest effect, followed by CSF, then coming security and privacy attitudes. PGF as a determinant for trust has been found significant in previous studies as Najafi and Kahani (2016); Aghdaie et al. (2011), and Lawrence and Tar (2010). In Palestine, the ICT infrastructure should be capable of keeping up with this evolution through increasing the current percentage of Palestinian households with internet connection. Also, it is necessary to develop the Palestinian postal service since its current capacity was not designed to accommodate with the increases in the international receipt mail by 57% of the previous year. This increase was attributed to e-commerce activities. On the other hand, the government role in issuing the relevant regulations is vital since government is the party responsible for establishing the safe legal environment that protects customers' rights by issuing guarantees and laws which will facilitate customers' beliefs that the e-vendors will keep their promises. In addition, the government should not overlook the dissemination of awareness among the society about e-commerce. The lack of resources such as brochures, leaflets and specialised training programs hinder the promoting of e-commerce (Shkoukani et al., 2013), hence working on providing such relevant resources, and building awareness and trust through training programs (Alkhaleefah et al., 2010) are necessary.

Security and privacy attitudes were found to be significant factors in predicting trust in e-vendors in many previous studies (Najafi and Kahani, 2016; Riquelme and Román, 2014; Wu et al., 2012; Eid, 2011; Ganguly et al., 2011; Chen, 2007; Román, 2007; Bart et al., 2005; Belanger et al., 2002). These results indicate that customers value the security and privacy features significantly. For customers to conduct electronic transactions with an unobservable vendor, they at least have to feel secure and that their privacy is protected. Individual customers in B2C e-commerce are concerned about the privacy of their personal and financial data, therefore, they would prefer to see easy-to-understand words such as 'personal', 'protected', and 'collect' in the privacy policies in order to demonstrate a higher concern for their personal information while interacting with the e-vendor's website (Vakeel et al., 2017). In the same manner, respondents' awareness about the importance of online security in e-commerce has placed the security and privacy attitudes as an influencing factor affecting TRST. Hence, for e-vendors to attract potential buyers and turn infrequent ones into frequent buyers, they should offer different guarantees and mechanism that ensure the security and safety

of the shopping transactions to inspire confidence and trust, as well as informing buyers about these procedures through the website (Chiu et al., 2014).

The findings regarding CSF match several studies' findings (Chinomona and Dubihlela, 2014; Wang et al., 2016; Chen, 2007; Flavián et al., 2006). Because of the aggressive nature of today's online businesses, and due to the importance of customers in any business and their impact on the business sales and profitability (Chinomona and Dubihlela, 2014), e-vendors have to gain some form of differential advantages to their customers in a bid to gain their trust and retain them (McElheran, 2013). Customers tend to trust the vendors who satisfy their requirements. When e-vendors websites operators save no effort in satisfying their customers by customising the products, being committed to their service, offering a network to ease communications among them and offer them various kinds of products, they expect that their satisfaction level will increase, hence their trust increases since trust is a consequence of the customers' level of satisfaction. The more satisfied the customers are, the more their desire to get engaged in long-term relationship with the e-vendors (Shao Yeh and Li, 2009), and the more they tend to recommend the business to others (Masoud et al., 2014). Therefore, businesses these days elevate the customers' role to that of stakeholders as a business strategy (Chinomona and Dubihlela, 2014), Particularly, that dissatisfied customers can quickly switch from the e-vendor website to another rival's website, disseminating their bad experience with the e-vendor to at least another 5 to 15 other people (Morgan, 2009).

The primary contribution and strength of this research lies in the three regression models of trust components, since few studies in literature studied the antecedents of the integrity, benevolence and ability of the e-vendor (Hwang and Kim, 2007; Oliveira et al., 2017; Wu and Tsang, 2008), and to the best of our knowledge, none of the studies were conducted in the Arab world context. These three regression models provide practitioners as well as researchers interested in studying factors affecting e-vendor trustworthiness characteristics a preliminary idea about the potential factors that have a significant influence on these three dimensions of trust.

The only common predictor in the three regression models is regulations. This reflects the importance of the regulations that control the online transactions between the two parties. The availability of regulations that direct and force the e-vendor to keep his/her promises and held agreement with the customers increases customers TRST, as well as it guarantees, to some extent, that the e-vendor would not miss use the personal information of the customers and to stand behind his/her products. Currently, legal regulations on e-commerce are not complete in Palestine, as they need to enact many systems that increase the effectiveness of e-commerce and enhance customers' trust in electronic transactions. There is a need for a unified regulatory, legal and economic formula that guarantees the rights of the shopper and the seller.

In the first regression model, besides regulations, integrity is mainly a function of commitment and ICT infrastructure. Having a reliable and supportive ICT infrastructure is the corner stone for establishing trust in e-environment; in order to keep his/her promises towards the customers, the e-vendor rely on the ICT infrastructure in delivering the purchases, having the website functioning all the time with no breakdowns, and for offering broader coverage of internet services to reach more customers. Thus, obviously the ICT infrastructure directly affects e-vendor integrity, benevolence and ability. This is supported by the findings of Aleid et al. (2009) who identified three factors that inhibit the diffusion and development of e-commerce in developing countries, namely, infrastructure, security and e-commerce laws. The commitment of the e-vendor towards

his/her customers and the quick solving of any problem they might encounter reflect the e-vendor's care for his/her customers. This post-purchase pattern is closely related to their satisfaction and future decisions towards the e-vendor. In other words, the e-vendor commitment that they sense and the level of satisfaction they create today directly influence their future relationship with the e-vendor (Masoud et al., 2014). Besides that, commitment in the integrity dimension of trust is also reflected by the seller's adherence to the rules and policies announced in the e-vendors website (Wu et al., 2014).

The second regression model of benevolence has three predictors, regulations, commitment and security. The higher level of commitment towards the customers, the higher the level of their trust in the e-vendor's benevolence. When the e-vendor stands for any of his/her products by being willing to replace it, or offering money back guarantee policy this enhances the customers trust in the benevolence of the trustee. The availability of a return/cancellation policy reflects e-vendor commitment towards the customers which in turn considered as a sign of e-vendor benevolence (Wu et al., 2014). Security attitudes in the e-vendor website indirectly inform the customers about the e-vendor strategies and policies to protect their information from any unauthorised access, so this would ultimately increase the trust level in the e-vendor benevolence.

The third regression model of ability has four predictors; security, adaptation, assortment and regulations. Customers judge a company's trustworthiness based on their perception of the abilities of the company in conducting its activities and tasks (Morgan and Hunt, 1999). The abilities and competencies of the e-vendors are two types; observable and unobservable competencies. The observable competencies are cues for the unobservable competencies. Thus, the adaptation to customers' desires and the vast assortment of products at the e-vendor website as observable competencies, those help in reflecting other unobservable competencies such as order fulfilment, ensuring secure environment for transactions, customer services and other operations.

## **6 Conclusions**

The objectives of this study were to determine the factors influencing buyers' TRST and the relative significance of each factor. The findings have answered the two research questions and achieved its objectives. The results showed that four out of five main independent constructs had a significant influence on buyer' TRST in Palestine. These are WSDA, security and privacy attitudes, CSF and PGF. The relative significance of each of these variables was examined by building a regression model for the data. The three main significant factors on buyers' TRST in Palestine include security and privacy attitudes, CSF and PGF, these factors explain about 28% of the variability in trusting e-commerce in Palestine. The highest impact was for the PGF, followed by the CSF and finally security and privacy attitudes.

The most influencing factors on e-vendor integrity were commitment, ICT infrastructure, and regulations, these factors explain about 23% of the variability in the integrity of the e-vendor. Similarly, three variables were the most significant on the benevolence of the e-vendor; these were regulations, commitment, and security, these factors explain 21% of the variability in the benevolence of the e-vendor. Finally, four predictors were the most significant factors on the ability of the e-vendor, these were regulations, adaptation, assortment, and security; these factors explain 23% of the variability in the ability of the e-vendor. In the three regression models of the sub-factors,



regulations was the only common variable in the three models, this implies that buyers in Palestine consider it as a dominant factor affecting their trust level in the integrity, benevolence and abilities of the e-vendor. Therefore, in order to engender TRST for the new customers, and reinforce the trust of the current customers the government is responsible for the drafting of laws and legislations that guarantee the rights of all parties which increase the bonds of trust. The findings of the present study revealed that most buyers aged 18–30 years, most of them were graduates or postgraduate degree holders with relatively short shopping experience for the majority of them. In additions, about one fourth of the surveyed respondents were used to shop online and pay directly when their purchases were delivered instead of using electronic payment cards.

Statistical difference based on the demographic factors showed that there was statistical significance regarding gender and accessibility to electronic payment methods only; whereas no statistical significant differences existed based on age, educational level and shopping experience. Male buyers tend to trust e-commerce more than female ones, and respondents with accessibility to electronic payment methods tend to trust e-commerce more.

## **7 Recommendations**

The recommendations of this study could be classified into two categories, recommendations for the government and authorities, and recommendations for the practitioners. More specifically, for the government, there is a necessity of enhancing awareness among the Palestinian society of the concept of e-commerce and its operations. We propose a number of mechanisms to promote awareness, including adopting a strategy to eliminate the illiteracy in information technology field among society members, promoting through social media due to its popularity, dissemination of elementary advices and information about e-commerce through the visual, audio and social media. In addition, we recommend drafting and issuing relevant regulations and legislations regarding online environment that guarantee the rights of all parties. These laws and legislations should also establish mechanisms that must be available in electronic advertisements to protect buyers from being exposed to fraud such as providing the legal name of the electronic service provider, its address, contact information and commercial registration data, to identify the service provider if registered in a commercial register, and data about the authority that supervise the service provider or e-vendor.

Developing the ICT infrastructure to meet the increasing demands in internet usage in general, and in e-commerce transactions in particular is highly-recommended. We also recommend to modernise the postal authority in Palestine in order to speed up internet services especially in rural areas, and improving supportive services such as shipping, transportation and enough mail boxes. In addition, modernising the system of direct payments, and encouraging government employees to expand their electronic purchases.

On the practitioners' side, we recommend, investment in the website design is vital, particularly that customers usually make their judgments on the e-vendor trustworthiness based on the first impression they got from the website design. Investing in building a professional, reliable, enjoyable, and secure website is elementary for attracting web browsers and makes them regular customers. Applying necessary security and privacy measures since the availability of persuasive security and privacy measures in the website

helps in breaking the ice and convinces the customer to conduct the transaction. Intensifying efforts on customer satisfaction especially that in the cyberspace nothing is easier than leaving a page of an e-vendor to another one. Satisfying customers encompasses different aspects, some of these were considered in the current study and proved their significance including customising the products according to customer's needs, being committed to solve the potential problems customers may face while using the website, establishing a network or a virtual community for the customers of the website to share experiences and assortment of products.

## 8 Limitations of the research

Like any other similar studies, this study has two main limitations, namely, firstly, it is impossible to include all potential factors, but the aim was to cover the most important and relevant determining factors of trust due to the particularity of the Palestinian context because of the restrictions imposed by the Israeli authorities on Palestinian telecommunication sector. The second limitation is represented by the lack of recent official statistics related to some elements of the study such as the number of internet users for shopping purposes in each of the Palestinian provinces and the absence of e-transactions laws.

## 9 Scope for further research

Some future research directions could be based on this study. More specifically, a new research that might focus on considering other independent variables including electronic payment system, price, and other factors could be a new research direction. Further, adding personal characteristics of the customers like propensity to trust other could open a new research expansion.

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