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Control Mechanisms for Assessing the Quality of Handmade and Artistic Products in e-Marketplace Platforms

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Abstract Selling handmade and artistic goods online is challenging since buyers need to be able to assess product quality before purchase. This study aims to explore how control mechanisms aid the assessment of the product quality of handmade and artistic goods. We do so by extracting control mechanisms for e-marketplace platforms from existing literature and discussing to what extent these are suitable for handmade and artistic goods. We found that existing literature mainly focuses on reputation systems. We reshaped the findings by conducting desk research to identify how control mechanisms are applied in a number of e-marketplaces. Our results show that in e-marketplaces that focus on selling handmade artistic products, a reputation system is not sufficient to ensure product quality in an online environment. Thus, it is critical to apply other control mechanisms which are more effective in increasing the trustworthiness of the seller of artistic and handmade goods. Last, we also suggest alternative control mechanisms to be explored in future research.

Keywords: • Control Mechanisms • E-marketplace • Trustworthiness • Product quality • Reputation system •

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1 Introduction

E-marketplace platforms are an example of multi-sided platforms in which a groups of buyers and sellers exchange goods. E-marketplaces enable buyers and sellers to exchange information, products, services and payment through the internet (Chong *et al.*, 2010). Examples of e-marketplace platforms are Amazon and Alibaba, on which not only the provider's own products are sold, but a large amount of third-party sellers are also active. Buyers can choose various products from various sellers and compare the products (Barratt and Rosdahl, 2002).

E-marketplaces have attracted many sellers and buyers to transact a wide variety of goods and services. However, e-marketplaces for handmade and artistic products are still hardly used. Many sellers prefer to join local handmade e-marketplaces rather than international e-marketplaces, since local sellers often lack English language skills and are unable to use international currencies. International handmade e-marketplaces also have strict requirements for sellers to join. Thus, only qualified sellers can join the platforms. Many buyers are also reluctant to use e-marketplaces after they have experienced being sent products which were not of the quality specified by sellers (Chiu *et al.*, 2010). In e-marketplaces, buyers and sellers are geographically separated, hence the products cannot be physically examined (Ye *et al.*, 2013). When buyers interact with unknown sellers and have less knowledge about the product and the sellers, buyers cannot ascertain the product quality, which leaves them dependent on product descriptions and the honesty of sellers to deliver the products as specified (Sänger *et al.*, 2016). Generally speaking, selling products online requires buyers to have trust in the sellers because they cannot assess the products virtually, are faced with a lack of information about the products from the seller and also with the presence of dishonest sellers (Sänger *et al.*, 2016).

Existing e-marketplaces offer various mechanisms for building potential buyers' trust in sellers and their products. These are mainly reputation systems that predict seller behaviour from past transactions (Zhang *et al.*, 2012). However, to a large extent, reputation mechanisms focus on sellers, and do not give information regarding the quality of specific products (Ye *et al.*, 2013). This puts buyers at risk as they lack information about the products while opportunistic sellers can easily register and access buyers' data (Lancastre and Lages, 2006). The problem associated with remotely assessing product quality is especially great for

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goods that are non-standardized and difficult to inspect remotely, such as artistic or handmade goods.

The goal of this paper is to evaluate whether control mechanisms from literature on e-marketplace platforms are applicable to handmade and artistic goods, whether for the local or international handmade e-marketplace. To do so, we conduct literature review about control mechanisms that affect the trustworthiness of e-marketplace platforms. The review is done in the context of an ongoing research project on control mechanisms and quality mechanisms for e-marketplace platforms, specifically for handmade and artistic goods. The overview serves as a basis for follow-up research on evaluating the effects of the elicited mechanisms on trustworthiness in e-marketplace platforms.   The research is followed by desk research to assess the implementation of control mechanisms in the local and international e-marketplace for handmade products. We have chosen Indonesia as a local market where many handcrafters produce and sell products.

This paper aims to answer the following research questions:

1. What control mechanisms that affect the trustworthiness of sellers on e-marketplace platforms have been discussed in existing literature?
2. Which trustworthiness issues in e-marketplace platforms have not been addressed, specifically in the context of handmade and artistic goods?

How are control mechanisms applied in existing e-marketplaces where handmade and artistic goods are sold, whether local or international?

2   Background

2.1   Handmade and artistic goods in e-marketplaces

Handmade products are non-commodity products that are produced by hand by trained and experienced people, without standardized production machines. Product quality relies on the crafter's experience. Some handmade products are produced by people building on experience handed down through generations and over a long time. The production of handmade goods by small firms is an important part of the economy of developing countries.

2.2   Multi-sided platforms and e-marketplaces

Whilst traditionally e-marketplaces were online stores with only one seller (e.g. the early days of Amazon), today most large e-marketplaces are open to any seller to engage in transactions with consumers. In this way, e-marketplaces have evolved into multi-sided platforms that mediate between large groups of buyers and sellers (Evans and Schmalensee, 2017). Multi-sided platforms typically exhibit network effects, which implies that they become more valuable as more users join (Katz and Shapiro, 1985). At the same time, opening up to a large group of sellers creates risks as low-quality sellers may harm the reputation and quality of a platform (Wareham *et al.*, 2013). A major challenge in such multi-sided platforms is therefore governance in general (de Reuver *et al.*, 2016) and specifically how to exercise control over the quality of different sides of a platform (Tiwana *et al.*, 2010).

2.3   Trust and Trustworthiness Conceptualization

Trust is defined as the belief that another party will perform in a way likely to bring the expected welfare or not do some unexpected harmful thing (Ažderska, 2012). In online commerce, consumer trust focuses on faith in sellers regarding product specification and quality (Gefen *et al.*, 2008).

Trustworthiness refers to the degree to which a party is considered to have ability, integrity, and benevolence (Gefen *et al.*, 2008). The ability means that the trustee has the skills, competences and characteristics to act in a specific domain (Mayer *et al.*, 1995). Integrity means that the party has a strong sense of justice as measured by the consistency between its words and actions (Mayer *et al.*, 1995). The last attribute, benevolence, means that another party will do good rather than egoistically taking profit from its partners (Mayer *et al.*, 1995).

Keeping promises to protect the other party's interests while not exploiting information asymmetries is a fundamental principle in a relationship with unknown partners. With reference to online selling, trust from buyers is needed before they decide to purchase online on an e-marketplace platform.

To build trust in e-marketplaces and sellers, there are generally three types of mechanisms:

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1. Institution-Based Mechanisms (IBM): this refers to third-party institutions that provide independent information about the quality of sellers and secure the process of transaction. Examples are third-party escrow, assurance seals and privacy protection (Liu and Tang, 2018).
2. Seller-Based Mechanisms (SBM): this refers to information provided by the seller, including information on product quality and terms of service. More complete information provided by sellers can reduce uncertainty and buyer risk (Liu and Tang, 2018).
3. Experience-Based Mechanisms (EBM): this refers to sharing information from previous buyers through feedback mechanisms and reputation systems (Liu and Tang, 2018).

2.4   Control Mechanism Definition

In literature on digital platforms in general, control refers to attempts by a controller to influence an individual or group to act as the objective of control (Goldbach, 2014). (Mukhopadhyay *et al.*, 2016) meanwhile state that control mechanisms play an important role in all participants of platform ecosystems reaching the platform's goals, which confirms the previous study that said that control mechanisms can encourage the platform members to act in ways that further the platform's goals (Tiwana, 2014).

There are two types of controls, namely formal control – such as input control, output and behaviour control (Tiwana, 2014) – and informal control – such as clan and self-control (Goldbach *et al.*, 2018). Control mechanisms can be categorized as follows (Tiwana, 2014):

1. Gatekeeping refers to implementing acceptance criteria for participants for allowing them to join a platform
2. Process Control refers to the degree to which platforms reward and punish participants based on their compliance with procedures, methods and rules
3. Metrics Control refers to the degree to which platforms reward and punish participants based on the outcome of their participation on the platform
4. Relational Control refers to values and norms that are shared among participants and influence their behaviour (Goldbach *et al.*, 2018).

We will apply these four control mechanisms for platforms in general in our analysis for e-marketplace platforms.

3   Method

We follow the literature review through the typical approach in information systems (Webster and Watson, 2002). We first created a syntax to find relevant studies about control mechanisms in e-marketplaces. The syntax consists of keywords related to control mechanisms (or sub-types thereof) and marketplaces as well as popular examples of marketplaces. We used three databases: Web of Science, Scopus and Google Scholar.

The syntax is: ("control" OR "control mechanism" OR "gatekeeping" OR "metrics control" OR "outcome control" OR "output control" OR "product quality control" OR "process control" OR "control behavior" OR "platform governance") AND TITLE-ABS-KEY ("Alibaba" OR "Amazon e-commerce" OR "e-marketplace" OR "e-marketplace platform" OR "ecommerce platform")). We added additional syntax to exclude the words "cloud", "blockchain" or "payment" such that papers are closer to e-marketplace topics.

The query was executed in MONTH YEAR, resulting in 22 papers from Web of Science, and 14 papers from Scopus. After a thorough reading of the papers, we finally included 14 papers from Web of Science and 2 papers from Scopus. We also conducted snowball sampling using the function from Google Scholar, resulting in 7 more papers, leading to a total of 23 papers. Most of the papers found discuss reputation systems and the reliability of rating. Other issues discussed in the papers include trust mechanisms, product quality, purchase, and so on.

We classified the collected papers into four categories, see Table 1. The first is trustworthiness mechanisms, which subsumes factors relying on institutional, seller-based and experience mechanisms. The second category is the specific mechanism of reputation systems, which we treat separately due to its prevalence in the literature. Third, we use a product-related category of papers, which discusses how product information influences buyer trust. The final category contains papers that do not fall into the previously mentioned categories.

Table 1. Classification of 23 Papers

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Topic	Sub Topic	Number of Paper
Trustworthiness mechanisms	1. Institutional mechanisms 2. Seller-based mechanisms 3. Experience mechanisms	(Liu and Tang, 2018), (Bao *et al.*, 2016), (Ou and Chan, 2014),(Hong and Cho, 2011), (Auinger *et al.*, 2016)
Reputation Systems	Robustness of Reputation System	(Sänger *et al.*, 2016), (Lee and Shin, 2014), (Du *et al.*, 2013), (Wolf and Muhanna, 2011)(Wolf and Muhanna, 2011),(Cabral and Li, 2015)
	Reputation Systems and their elements 1.Reputation 2.Online Review: 3.Rating 4.Feedback 5.Word of Mouth	(Chatterjee *et al.*, 2012), (Fajar and Sandhyaduhita, 2016) (Zhang *et al.*, 2017), (Trenz, 2013) (Dimitrios and Ghandour, 2016) (Hu *et al.*, 2012) (Lin and Heng, 2016)
Product	1. Product Information, 2. Product Quality, 3. Seller Information, 4. User-generated Photo	(Fajar and Sandhyaduhita, 2016), (Meents and Verhagen, 2018), (Bao, 2015), (Zhang, 2012), (Johnson *et al.*, 2015)
Other mechanisms	1. Favourite product sold/ sales volume 2. Historical Sales Record 3. Delivery Services Quality	(Ou and Chan, 2014) (Ye *et al.*, 2013) (Nurdani and Sandhyaduhita, 2016)

We reshaped the findings by conducting desk research to identify how control mechanisms are applied in several e-marketplaces. We selected e-marketplaces that represent local and international e-marketplaces, also e-marketplaces that sell general and handmade products. We selected Indonesia as a country of local handmade-e-marketplaces and as a country that produces handmade goods. As international e-marketplace we chose Alibaba and Etsy that represent international e-marketplaces. We conducted the desk research by visiting these e-marketplace websites, trying to buy products, reading the reviews, signing on as new customers (as far as possible), choosing the products, choosing the delivery, filling the product order form and reading the discussion forum and also going to a lot of effort to identify the control mechanisms which are applied in these e-marketplaces.

4   Finding

4.1   Trustworthiness

Regarding trustworthiness, we found 5 papers that discuss this topic in general. These papers mainly discuss institutional and social mechanisms.

Regarding institutional mechanisms, various forms are discussed in the five papers. These range from online credit card guarantees, escrow services (Liu and Tang, 2018),(Bao *et al.*, 2016),(Ou and Chan, 2014), privacy protection (Liu and Tang, 2018), intermediary protection, reputation (Ou and Chan, 2014), third party guarantee (Hong and Cho, 2011) and third party trust seal (Auinger *et al.*, 2016).

Institutional mechanisms are defined as structures provided by third parties for supporting and protecting the success of transactions (Bao *et al.*, 2016). For instance, escrow services give customers the guarantee that the payment will only be released when the specified merchandise is received. Alternatively, a credit card guarantee can protect buyers from losing the money through financial institutions (Bao *et al.*, 2016). These mechanisms protect buyers against potential risks in the e-commerce environment (Bao *et al.*, 2016). (Ou and Chan, 2014) also include reputation as an institutional mechanism, which will be discussed in more detail in Section 4.2.

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(Hong and Cho, 2011) point out that third party guarantees such as Verisign can assure that customers are protected and (Auinger *et al.*, 2016) suggest putting trust seal logos on the website of vendors. They found that the display of a trust seal (i.e. recommendation from a trusted third party that the seller is trustworthy), has a strong impact on building customer trust (Bao *et al.*, 2016). The study finds that using trust seals is especially suitable for enhancing trust in new sellers and small shops (Auinger *et al.*, 2016).

The five papers have different findings regarding the implications of trustworthiness mechanisms on trust. (Hong and Cho, 2011) find that increasing trust in the e-marketplace will automatically increase trust in the sellers on that e-marketplace. In contrast, (Liu and Tang, 2018) finds that trust in e-marketplaces substitutes trust in sellers, and directly affects repurchase intention. These two studies show that seller-based mechanisms both affect trust in sellers directly as found in (Liu and Tang, 2018) but possibly also indirectly, since (Liu and Tang, 2018) find that they positively affect trust in e-marketplaces and (Hong and Cho, 2011) find that trust in e-marketplaces positively affects trust in sellers.

(Ou and Chan, 2014) combined social mechanisms and institutional mechanisms with additional mechanisms provided by sellers (i.e. return policy and repair services) to attract buyers. This holds especially for e-marketplaces which offer differentiation mechanisms (Ou and Chan, 2014) as additional mechanism. Social mechanisms refer to the popularity of sellers and products. The study finds that social mechanisms such as shop tagging and product tagging give quality signals and are the most robust predictors of sales volume in e-marketplaces. Shop tagging and product tagging refer to the number of people tagging a specific product and seller as an favourite seller and product.

(Ou and Chan, 2014) establish institutional mechanisms as an effective way to build customer trust. By adding these social mechanisms, buyers can differentiate sellers from a "quality" perspective. (Ou and Chan, 2014) find that institutional mechanisms are an effective way to build customer trust, but the study shows that social mechanisms by using shop and product tagging are more effective (Ou and Chan, 2014).

Furthermore, (Bao *et al.*, 2016) find that institution-based mechanisms have no significant impact on trust and repurchase intention. Customers rely on "interactivity with sellers" when the perceived usefulness of institution-based mechanisms is low. This implies that if customer trust has not been built, customers are likely to use communication tools to get information as additional assurance to increase their confidence in purchase decisions.

4.2   Reputation Systems

Reputation can be defined as the collective scale of trustworthiness, based on the member's opinion (Jøsang *et al.*, 2007), in a platform. The term "reputation" is always related to the term "trust". In this study we will use reputation in the context of the community's general reliability evaluation of a seller (Jøsang and Golbeck, 2009). Reputation is one of the control mechanisms that is categorized as outcome control (Tiwana, 2014) and shows the degree of platform participants' performance as measured against the achievement which was predefined by the platform owner. We found many studies about reputation, indicating that reputation is an effective way to find out more about sellers based on the experience of previous buyers. Reputation plays a role as secondary information about the product quality and seller quality. Buyers rely on the reputation that has been built by sellers, especially when they lack of information about the product itself. To build a good reputation, sellers have to deliver high-quality products (Fajar and Sandhyaduhita, 2016).

A first mechanism in building reputation is online reviews, which are popular information sources in product research for online purchase (Trenz, 2013). The quality of review information should be presented accurately to prevent buyer misinformation (Zhang et al., 2017). Furthermore, review information can enable buyers to differentiate product quality (Trenz, 2013) from the perspective of previous buyers.

A second mechanism in building reputation is consumer feedback (Hu *et al.*, 2012). The term consumer feedback is also called word of mouth in (Hu *et al.*, 2012), who find that distance between the word of mouth information presented and the real product information or sellers subsequently affects word of mouth both in volume and in valence (Lin and Heng, 2016). However, (Hu *et al.*, 2012) find that the purchase decision is also influenced by the brand or model of the

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product. Bad word of mouth does not influence buyer trust according to (Du *et al.*, 2013), which is in contrast to previous studies.

Studies about reputation mechanisms mainly focus on the reliability of reputation systems. Given the important role of reputation systems in signalling previous buyers' perception of products, many scholars find weakness in reputation systems, such as that sellers sell many cheap products to build a good reputation while presenting untrue information on a few expensive products. Some sellers also offer various products of which the quality varies depending on the season (Sänger *et al.*, 2016). Scholars have created tools to detect malicious sellers, and these have been shown to change buyer behaviour (Sänger *et al.*, 2016). Buyers do not decide to purchase products from several sellers, while buyers buy the products through old systems. Wolf, J. R. (2011) finds that buyers interpret the feedback information in a biased manner, based on a simulation of an online auction site comparable to eBay, with participants acting as buyers.

Several studies make suggestions on how to improve reputation systems. Buyers may also not be influenced by existing bad word of mouth in rating systems as found in (Du *et al.*, 2013), which means that the accuracy of reputation systems needs to be improved. Another study suggests improving reputation systems by including emojis and avatars, in order to improve buyers' ability to understand (Dimitrios and Ghandour, 2016). One study shows the interaction between reputation mechanisms and institution-based mechanisms, as customer feedback improves as the rebate incentive increases, both regarding speed of feedback and number of bids (Cabral and Li, 2015). Lastly, another effort to improve the reliability of reputation systems proposes using reviewer photos to increase consumer trust (Lee and Shin, 2014).

4.3   Product Information and Quality

Similarly to the previously discussed mechanisms, product information helps buyers to reduce the uncertainty of information. From five papers, we found three ways in which product information mechanisms affect trustworthiness.

Firstly, product information can reduce buyer risks and lead to purchase decisions. The accuracy of information provided by sellers proves the capability of sellers to provide good quality products (Meents and Verhagen, 2018).

However, this study has a limitation since it was conducted in a well-known e-marketplace.

Secondly, one study states that product quality information can support the reputation of sellers (Fajar and Sandhyaduhita, 2016). Product quality information also significantly impacts customer satisfaction, which in turn leads to repurchase intention (Bao, 2015). Sellers should be encouraged not only to build reputation but also to retain customer satisfaction by maintaining the actual product quality (Bao, 2015). Alibaba implemented various methods to control product quality as described in (Zhang, 2012), including consumer-oriented evaluation design, joint certification and third-party agencies. Consumer-oriented evaluation design refers to evaluation by customers based on the fit of both consumer needs and consumer feelings after receiving products. Joint certification refers to the certification and monitoring by third party agencies of both supplier and product material before they join the supply network.

Lastly, to build costumer trust, a study proposes the use of user-generated photographs to illustrate the product. User-generated photographs engender more trust in customers because these pictures can convey the quality and nature of products (Johnson *et al.*, 2015) and can also attract more bidders at online auctions than stock photographs, since user-generated photographs are less susceptible to manipulation by sellers.

4.4   Other Mechanisms

From the papers collected, we found other mechanisms that do not fit the three categories discussed so far. These mechanisms can help buyers to identify product quality and good sellers. The first mechanism is delivery services. High quality of delivery services supports customer satisfaction and trust in purchasing from e-marketplaces (Nurdani and Sandhyaduhita, 2016).

Another mechanism that can help buyers to identify product quality is the historical sales record (Ye *et al.*, 2013). This mechanism addresses a weakness of rating systems that do not represent the quality of particular products since sellers can sell a variety of product items. The quality of ratings might also be contaminated with inflation of low-priced products. Thus the historical sales record can be a credible signal for buyers about the quality of a specific product.

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In addition, a similar mechanism is also found in (Ou and Chan, 2014): shop tagging and product tagging as indicators of product quality. These mechanisms refer to the number of web surfers who tag the shop and the products as favourite shop and products. Sellers who provide low-quality products have difficulty attracting attention from potential buyers in this way.

5   Desk Research Discussion

Following the literature review, we conducted desk research to assess whether and how the identified control mechanisms from literature have been applied in existing e-marketplaces in practice. We have selected e-marketplaces on two dimensions: first, we aim to have e-marketplaces which sell general products and e-marketplaces that sell handmade or craft products; and second, we aim to analyse both international and local e-marketplaces. Based on these dimensions, 8 e-marketplaces have been selected for this research: Alibaba, Amazon, Etsy, Tokopedia, Bukalapak, Inacraftmall, Batikmal and Kuka.

Table 2: E-marketplaces used in Desk Research

Products Category Sold in e-marketplace	Scale of e-marketplace	
	International	Local (Indonesia)
General Products	Alibaba, Amazon	Tokopedia, Bukalapak
Handmade	Etsy	Kuka, Inacraftmall, Batikmal

As can be seen in Table 3, most of the e-marketplaces have been implementing many types of control mechanisms. Table 3 also shows that the control mechanisms we derived from literature have been applied in most e-marketplaces. Yet, the number of transactions of handmade products remains lower than for general products. Possibly, the control mechanisms applied are not sufficient for selling handmade products. The results show that generic international marketplaces (e.g. Amazon, Alibaba) that also sell handmade products apply several control mechanisms. However, none of the e-marketplaces apply all mechanisms completely, as for instance reviews of products that Amazon provides are not provided by Alibaba.

Table 3: Control Mechanisms applied in several e-marketplaces

Dimension	Types of Control Mechanism	Types of E-marketplace							
		Local e-marketplace					International e-marketplace		
		I	II	III	IV	V	VI	VII	VIII
Trustwor-thiness	online credit card guarantees	√	√	√	-	-	√	√	√
	Escrow services	√	√	√	√	√	√	√	√
	privacy protection	√	√	√	-	√	√	√	√
	intermediary protection,	√	√	√	√	√	√	√	√
	third party guarantee	√	-	-	-	-	-		√
	third party trust seal	√	-	-	-	-	-		√
Reputati-on Systems	reviewer photos		-	-	-	-	-	√	-
	Reputation	√		-	-	√			√
	Online product review	√	√	-	-	√	√	√	-
	Rating	√	√	√	√	√	√	√	√
	Feedback	√	√	-	-	√	√	√	√
	Word of mouth	√	√	-	-	√	√	√	√
	Transaction History			-	-	√			√
Product	Product Information	√	√	√	√	√	√	√	√
	Product quality information	√	√	√	-	√	√	√	√
	Control quality product	-	√	-	-		√		√
	User-generated photo	√	√	-	-	√	√	√	√

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		I	II	III	IV	V	VI	VII	VIII
Other Mechani-sms	Instant Messanger	√	√	-	-		√	-	√
	High Quality delivery services	√	√	√	-		√		√
	Historical sales record	√	√	-	-	√	√		
	Shop and product tagging	√	√	-	√	√	√		√
	Seller identity/ profile/			√	-				√
	Legal status of seller				-				√

Note:
I= Tokopedia   V=Kuka
II= Bukalapak   VI=Etsy
III= Inacraftmall   VII= Amazon
IV= Batikmal   VIII=Alibaba

6   Discussion

Brief desk research on the major international e-marketplace platforms shows that most of the mechanisms from the previous section have been applied in practice. However, reputational and social mechanisms, in particular, are less suitable for hand-made and artistic products since buyers are not expert enough to evaluate the product quality. Consequently, sales of handmade and artistic goods online are still low in number of transactions compared with the general products being sold in the e-marketplace. Hence, product information-related mechanisms, particularly, are promising in this specific context.

We find that for specialised e-marketplace platforms for handmade and artistic goods, for instance in the area of our follow-up study (Indonesia), most product information mechanisms are not yet being applied. We suggest that the following mechanisms warrant further study in the context of trustworthiness of sellers of handmade and artistic goods:

1. The use of user-generated photos that can build the trustworthiness of sellers and allow buyers to verify the products and quality descriptions.

These photographs have been shown to attract many bidders in online auctions (Johnson *et al.*, 2015), but have not yet been studied in the context of handmade and artistic goods.

2. Detailed Product Information (Meents and Verhagen, 2018) can reduce the risk for customers from uncertainty of information. For hand-made and artistic products, information might also describe the material, product specification and the method of production, to clearly explain the product and its production process. Such explicit, accurate information is likely to be a signal to buyers that sellers are dedicated and responsible, and will behave honestly throughout the transaction process.

3. A promise from sellers and service statements of additional after- sales service will serve as a warranty that the seller has competence, integrity and benevolence and could lead the customer to accept online shopping and to make purchases (Liu and Tang, 2018). For handmade and artistic goods, further study could examine matching the seller's statement and the product received or after sales services.

4. As explained in previous studies, reputation systems are effective as previous information about sellers and products. The use of reviewer's photo can influence buyers to accept the review quality of a product or seller and can lead to a purchase decision (Lee and Shin, 2014). The disclosure of the reviewer's identity can shape the judgment of product quality (Forman *et al.*, 2008). Future research can explore multiple attributes of the communication process such as communicator, message, channel and receiver. The use of reviewer photos can be applied to hand-made products: the reviewer's photo could be a role model for using the product and could affect the buyer's purchase decision.

5. Purchase history has a significant impact on the seller's performance (Ye *et al.*, 2013). This mechanism affects the perceived product quality of current items more than the seller's overall reputation rating or feedback score. However, this mechanism has a limitation as sellers can manipulate the transaction history by using fictitious accounts. This mechanism is not effective for well-known products since buyers already know the product quality. Many e-marketplaces have implemented this mechanism but it could be examined for handmade artistic goods.

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6. A final mechanism to be examined by (Auinger *et al.*, 2016) is the trust seal as a recommendation from a third party. The study examines the impact of certain factors, namely the presence of a trust seal, contact of sellers, consumer positive-review, and negative consumer review on building trust from buyers. The study finds that only trust seals significantly influence trust.

Furthermore, the desk research showed that many control mechanisms have been applied in these e-marketplaces, but the number of handmade products sold out is low, which indicates that applying these control mechanisms is still not sufficient to build the trust of buyers vis-à-vis sellers.

7   Conclusion

In this section we get back to the research questions of the study and answer them. The questions are:

1. What control mechanisms that affect the trustworthiness of e-marketplace platforms have been discussed in existing literature?
   To answer this question, we have found papers that can be categorised into four themes:
   - Trustworthiness: institutional, experience and social mechanisms, such as escrow or warranty services
   - Reputation: online reviews, consumer feedback or word of mouth that complement information provided by sellers
   - Product and quality information: these mechanisms are information provided by sellers with reference to their products
   - Other mechanisms: we found other mechanisms that can build the trust include delivery services that can support customer satisfaction and trust in sellers of an e-marketplace, and use of the historical sales record and product tagging are also mechanisms that can be used as indicators of product quality.
2. How are control mechanisms applied in existing e-marketplaces where handmade and artistic goods are sold, whether local or international?
   The desk research shows that the implementation of control mehanisms

is still not sufficient to build trust of buyers vis-à-vis sellers for handmade products. These findings require further study in context.

3. Which trustworthiness issues in e-marketplace platforms have not been addressed, specifically in the context of handmade and artistic goods? We found six mechanisms which can address the issues that require further study in a context of artistic and handmade products, namely user-generated photos, detailed product information including the material and the method of production, promise and service statement of sellers, reviewers photo, purchase history and trust seal.

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