

Preventing identity theft: identifying major barriers to knowledge-sharing in online retail organisations

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Preventing identity theft: identifying major barriers to knowledge-sharing in online retail organisations

Abstract

Purpose – Knowledge-sharing (KS) for preventing identity theft has become a major challenge for organisations. The purpose of this paper is to fill a gap in the literature by investigating barriers to effective KS in preventing identity theft in online retail organisations.

Design/methodology/approach – A framework was proposed based on a reconceptualisation and extension of the KS enablers framework (Chong *et al.*, 2011). A qualitative case study research method was used for the data collection. Thirty-four semi-structured interviews were conducted in three online retail organisations in the UK.

Findings – The findings suggest that the major barriers to effective KS for preventing identity theft in online retail organisations are: lack of leadership support; lack of employee willingness to share knowledge; lack of employee awareness of KS; inadequate learning opportunities; lack of trust in colleagues; insufficient information-sourcing opportunities and information and communications technology (ICT) infrastructure; a weak KS culture; lack of feedback on performance; and lack of job rotation.

Practical implications – The research provides solutions for removing existing barriers to KS in preventing identity theft. This is important to reduce the number of cases of identity theft in the UK.

Originality/value – This research extends knowledge of KS in a new context: preventing identity theft in online retail organisations. The proposed framework extends the KS enablers framework by identifying major barriers to KS in the context of preventing identity theft.

Keywords Knowledge management, Knowledge-sharing enablers, Internal barriers, Identity-theft prevention, Information security, Case study research, Semi-structured interviews

Paper type Research paper

1. Introduction

Information has become an increasingly valuable asset, and hackers are frequently accessing and abusing the sensitive information of organisations and individuals for financial gain (Liu *et al.*, 2011). The total direct cost of retail crime increased by 6% more than in 2016 to just over £700m in 2017 (BRC [British Retail Consortium], 2017). Identity theft is one of the fastest-growing online crimes (Abdullah *et al.*, 2016) and it affects the online retail industry (Rahman *et al.*, 2018; Sayles, 2012; Tian *et al.*, 2018). It refers to stealing someone's whole identity, their personal information or their bank card details (Abdullah *et al.*, 2016). The major challenges associated with identity-related offences include credit problems for consumers (such as aggravation by debt collectors and the rejection of loan applications), disruption to normal life (such as reputation damage), and the psychological difficulty of providing personal data to organisations and banks during an investigation (Kirk, 2014; Spanaki *et al.*, 2018; Tsohou and Holtkamp, 2018). Enhanced awareness of identity theft and media reports of these crimes have intensified interest and attracted the attention of consumers, organisations, governments and researchers (Almerdas, 2014; Chakraborty *et al.*, 2016; Doargajudhur and Dell, 2018; Walt *et al.*, 2018). Such incidents can have numerous consequences; for example, loss of customer confidence, damage to an organisation's reputation, legal issues and financial losses (Kerr and Button, 2013). In 2017, 175,000 cases of identity theft were recorded: an increase of 125% over ten years (Cifas, 2018; Hughes, 2018). Fraudsters continued to focus on online applications, with 88% of identity fraud cases being internet-enabled (Cifas, 2018).

To prevent such security threats and attacks, organisations have several options. These include identifying the risks and sharing knowledge about information security (Doherty and Tajuddin, 2018; He and Johnson, 2015; Liu *et al.*, 2011; Naicker and Van Der Merwe, 2018). Having sufficient information and knowledge to handle threats is crucial for recognising and reducing risks (Safa *et al.*, 2015). Therefore, organisations need to collect and share knowledge on security risks and find solutions for reducing them (Feledi *et al.*, 2013). Knowledge-sharing (KS) is the process through which individuals share their expertise and experiences with others to find new ideas or deal with challenges and problems (Ortiz *et al.*, 2017). Sharing knowledge with employees can avoid similar security solutions being created more than once and leads to more effective security measures (Feledi *et al.*, 2013). Indeed, KS plays a vital role in increasing the knowledge of individuals within organisations (Charband and Navimipour, 2016; Hwang *et al.*, 2018; Zhang *et al.*, 2018).

Table I in Appendix 1 contains the most relevant and frequently cited studies that have investigated KS. The information illustrates that although numerous studies have explored KS in specific contexts, the findings cannot be generalised. Previous studies have reported diverse barriers to KS, which implies that these barriers differ according to the business and knowledge context

(Pirkkalainen and Pawlowski, 2014; Tjoflåt *et al.*, 2017). As a result, authors have called for more research into KS barriers in new contexts (Blagov *et al.*, 2017). Thus, due to the specific nature of the knowledge shared, it has been suggested that KS in the context of information security is different from KS in other contexts (Tamjidyamcholo *et al.*, 2014).

KS can help in the context of handling online identity theft (Feledi *et al.*, 2013; He and Johnson, 2015; Liu *et al.*, 2011, Safa *et al.*, 2015). However, there is a lack of research on the effective sharing of knowledge on security and best practices (He and Johnson, 2015; Khakurel *et al.*, 2018; Ochieng *et al.*, 2018). The need for research into barriers to knowledge-management in the context of information security has been highlighted by previous studies (Gal-Or and Ghose, 2005; Gordon *et al.*, 2003; Liu *et al.*, 2011; Tamjidyamcholo *et al.*, 2014). There is a general lack of knowledge about which barriers to KS are most important in organisations (Riege, 2005); this is even more pressing in the context of information security, where few studies have investigated KS (Flores *et al.*, 2014; Safa and Solms, 2016). More specifically, very little work has been done regarding KS in the prevention of identity theft (Abdullah *et al.*, 2016).

Individuals and groups need to enhance their knowledge about issues of identity theft and how to protect themselves, and companies need to implement KS processes to prevent identity theft in their own organisations. However, existing barriers to these KS processes present major obstacles to enhancing the knowledge of employees working in online retail organisations. In large organisations, employees have fewer opportunities to share their knowledge face to face; therefore, KS barriers are more severe in larger online retail organisations than in small- and medium-sized enterprises (SMEs) (Tamjidyamcholo *et al.*, 2014). This calls for more research in larger organisations. Hence, the main aim of this research is to bridge the gap in the literature by investigating the existing barriers affecting KS processes in large online retail organisations. The KS enablers framework proposed by Chong *et al.* (2011) includes KS implementation issues; hence, it was adopted as the underlying theoretical framework for this study.

This research makes theoretical and practical contributions. First, it bridges a gap in the literature by providing a comprehensive framework for a full understanding of the barriers to KS for preventing identity theft in online retail organisations. Second, it contributes to the existing literature by reconceptualising and extending the KS enablers framework proposed by Chong *et al.* (2011) in the context of identity theft in retail organisations in the UK. Three new factors related to the context of this study are added to the framework: lack of employee willingness to share knowledge, lack of employee awareness, and lack of trust in colleagues. Third, the research has several practical implications. Sharing lessons learned and knowledge about the practice of preventing identity theft can help organisations reconsider their processes and evaluate whether their security procedures are addressing the concerns raised. Indeed, this study seeks to provide practical guidelines for overcoming diverse KS barriers more successfully in the context of preventing identity theft.

The remainder of this paper is organised into the following sections: a review of the literature; a discussion of the research methods employed; a presentation of the findings; a discussion of their importance; the theoretical contributions, limitations recommendations for future research; and, finally, the conclusion.

2. Literature review

Binder and Gill (2005) explain that it is difficult to measure the effectiveness of methods of preventing identity theft. Nevertheless, Duffin *et al.* (2006) argue that one of the most effective ways to prevent identity theft is to adopt effective organisational preventive control measures, which are often linked to the company's employees. Kerr and Button (2013) explain that sanctions and sentencing play an important role in preventing further cases of identity fraud. Meanwhile, Button and Gee (2013) highlight the importance of creating an anti-fraud culture in the organisation that encourages honesty and trust. Interestingly, national culture is also highlighted as an important influence on organisational culture (Button and Gee, 2013). In addition, Button *et al.* (2014) emphasise the importance of education and training in the prevention of identity fraud.

The review of the literature finds that the online retail industry acknowledges the importance of KS (Charband and Navimipour, 2016; Kozlowski *et al.*, 2016; Lai *et al.*, 2016; White and Fisher, 2008). However, many online retail organisations face difficulties with collecting, integrating and developing appropriate information and practices (Baker *et al.*, 2018; Bhatt, 2002; Jonsson and Kalling, 2007). Furthermore, even when knowledge is shared, convincing people to provide and use stored knowledge resources is a challenge (Ardichvili *et al.*, 2003; Suppiah and Singh Sandhu, 2011). A critical examination of the factors that influence KS reveals that they fall into three categories: individual (Alamahamid *et al.*, 2010; Lee and Al-Hawamdeh, 2002; Riege, 2005; Wang *et al.*, 2015); organisational (Islam *et al.*, 2012; Ives *et al.*, 1997; Kim and Lee, 2004; Martin *et al.*, 2010); and technological (Alavi and Leidner, 2001; Argote *et al.*, 2003). These three overarching factors are

highlighted by many investigators (e.g., Islam *et al.*, Ives *et al.*, 1997, 2012; Kim and Lee, 2004; Martin *et al.*, 2010; Salleh, 2010).

It can be argued that many of the obstructions to successful KS methods are related to individuals, as KS has a human element as its core (Donate and Guadamillas, 2015). People are complicated, with different psychological needs (Donate and Guadamillas, 2015). Table I shows that existing studies have identified nine main barriers to KS in organisations and have highlighted different areas related to each of these barriers. However, there is a lack of research on the main barriers to KS in the context of identity theft. On the other hand, several factors have been identified as *enablers* for knowledge management in public organisations (Chong *et al.*, 2011). These enablers are: knowhow and skill in information and communications technology (ICT); job training; job rotation; feedback on performance; learning opportunities; information-sourcing opportunities; leadership support; a KS culture; ICT infrastructure and software; knowledge-management technologies; and the KS process (Chong *et al.*, 2011). If these enablers are absent, the process of KS cannot take place (Chong *et al.*, 2011).

The KS enablers framework developed by Chong *et al.* (2011) forms the basis of the framework proposed in this paper. It was selected for three main reasons. First, the framework integrates the main factors that are significant for KS in the existing literature (as shown in Table I). Second, the framework was among the first to address the lack of knowledge on the topic of KS in an organisational context. Third, the framework is comprehensive in terms of identifying the KS enablers at the organisational, technological and individual levels. Although the existing literature offers other frameworks, such as the KS enablers frameworks proposed by Allameh and Zare (2011), Kanaan *et al.* (2013) and Hussein *et al.* (2016), these frameworks do not account for these four levels in an organisational context or integrate them into one framework. Therefore, the framework proposed in this study is based on Chong *et al.*'s (2011) framework in order to identify the challenges organisations face in terms of KS for identity theft prevention.

Table I provides a summary of the literature reviewed. It identifies nine main barriers to KS in different contexts. Based on an analysis of the studies in Table I, it can be argued that the knowledge-management enablers identified by Chong *et al.* (2011) do not cover all the barriers to KS, as additional factors were identified in the literature. Indeed, the review of the literature reveals three challenges that were not integrated into Chong *et al.*'s (2011) framework: lack of employee willingness to share knowledge, lack of employee awareness, and lack of trust in colleagues.

The nine barriers proposed in the framework for this study are discussed in the following sections.

2.1 Inadequate learning opportunities

Learning opportunities enhance progress in achieving outcomes by eliminating previous mistakes and removing weaknesses in organisations (Harteis *et al.*, 2008; Yoon and Kim, 2013). Accordingly, insufficient training and learning is a large barrier to KS (Jaegersberg and Ure, 2011; Kukko, 2013; Pirkkalainen and Pawlowski, 2013; Riege, 2005; Sun and Scott, 2005). Sun and Scott (2005) highlight that a lack of learning opportunities at the individual, group and organisational levels is a major challenge for KS. Job training can be grouped into two types. The first is general training, which impacts on general human capital and enhances productivity in all job types; examples include training to enhance computer skills and language courses (Hortovanyi and Ferincz, 2015). Knowledge and general skills can be transferred to job holders in similar companies, such as businesses competing in the same industry sector, and to similar jobs in the same profession (Hortovanyi and Ferincz, 2015). The second category of job training is firm-specific training, which enhances knowledge solely in the employee's current organisation (De Grip and Sauermann, 2013). This type of training is provided to enhance knowledge of machinery, workplace infrastructure and procedures that are only used in the company where the employee is working; it is provided to impart knowledge of particular characteristics of the organisation's products and customers (De Grip and Sauermann, 2013).

2.2 Lack of feedback on performance

Feedback is important for the assessment of employees' activities in organisations (Steelman and Wolfeld, 2018). For a long time, companies have observed their employees; however, current developments in electronic technology are advancing performance monitoring (Alder and Ambrose, 2005; Yu *et al.*, 2018). Feedback can be provided for various purposes: on the outcome of activities or processes; to provide direction when employees move away from their primary goals; to establish new goals or adjust existing goals; or to provide guidance on performing activities (Hollenbeck *et al.*, 2018). Furthermore, feedback encourages critical reflection on situations and tasks, which helps to bring about new approaches (Gabelica *et al.*, 2012). Feedback can also help organisations to

understand employees' level of awareness of KS and of identifying and preventing identity theft (Chong *et al.*, 2011).

2.3 Lack of an efficient ICT infrastructure and insufficient information-sourcing opportunities

An effective ICT infrastructure enables employees to generate, store and share knowledge with other employees, teams and departments (Dong *et al.*, 2016; Syed-Ikhsan and Rowland, 2004). The ICT infrastructure includes the intranet, communication networks, emails, data warehousing and a decision-support system (Stankosky, 2005). Technologies that have been developed with knowledge management in mind comprise document-management and workflow systems, innovative knowledge bases, and expert systems for creating communal memory, data-extraction and data-filtering systems. These technologies include the internet and groupware that connects organisations on the intra-organisational and inter-organisational levels and throughout the world (Holsapple, 2013; Martin, 2000). Technology is important for creating, storing, retrieving, transmitting and sharing knowledge in a collaborative environment (Okere, 2017). In any organisation, an effective KS process requires well-structured information-sourcing opportunities and a good IT infrastructure. When an organisation does not have an efficient ICT infrastructure to document and transfer its information and knowledge, KS is challenged (Okere, 2017; Sun and Scott, 2005; Yang *et al.*, 2012).

2.4 Lack of leadership support in KS

Leadership plays an important role in managing the KS process in any organisation (Bass and Stogdill, 1990; Muethel and Hoegl, 2016). This is because leaders are accountable for developing strategies for encouraging and making the best use of a learning culture and KS (Boerner *et al.*, 2007). Leaders are required to develop an unrestricted culture and build an environment that supports KS (Chuang *et al.*, 2016). Riege (2005, 2007) speculates that a lack of efficient leadership in KS is a barrier at the organisational level. KS in organisations is voluntary and people may need training to share their knowledge; therefore, continuous support and clear, effective guidelines are required (Mittal and Rajib, 2015). To create an environment of KS in an organisation, it is vital for leaders to emphasise their long-term commitment and support for sharing knowledge. Moreover, managers can facilitate KS in the organisation by developing policies to support the process (Mittal and Rajib, 2015). Senior executives and managers can also support KS by revealing the breadth of their own knowledge, using the knowledge of others when taking action (Aga *et al.*, 2016; Mueller and Kamoche, 2000), and rewarding others who share their knowledge (Barnes, 2001).

2.5 Weak KS culture

Organisational culture refers to the shared values, beliefs and performance of people in an organisation (Hara and Hew, 2007; McDermott and O'Dell, 2001). It plays a significant role when organisations employ new strategies for KS (McLaughlin *et al.*, 2008; Syed-Ikhsan and Rowland, 2004). Furthermore, organisational culture controls the effects of related factors, such as existing technology and management techniques for effective KS. Jones *et al.* (2006) group organisations into two main categories: first, stability-oriented organisations, which ignore the need for change and the transfer of knowledge; and second, change-oriented organisations, which welcome any change created by KS. Nation, culture and the diversity of spoken languages in the organisation have been identified as KS barriers (Riege, 2005). In addition, McDermott and O'Dell (2001) highlight that organisations should create a culture of tolerance and learning from mistakes to improve KS.

2.6 Lack of job rotation

Some experiences are hard to code and document (Ardichvili *et al.*, 2003). In such cases, job rotation can be a good solution (Abdullah *et al.* 2016). Job rotation enables employees to work in different situations and to learn about and experience the related problems and solutions for themselves, expanding their knowledge boundaries. It can also help employees learn from each other (Riege, 2007). Hence, an organisation that does not use job rotation may find it difficult to enhance the knowledge of individual employees and teams (Aga *et al.*, 2016; Huang and Pan, 2014; Ortega, 2001). There are three reasons for adopting job rotation in any organisation (Eriksson and Ortega, 2006). The first is employee learning, which makes employees more efficient and resourceful. The second is employer learning: when employees work in different roles, employers learn about the weaknesses and strengths of individuals in the organisation. The third is employee motivation, as working in a new environment can reduce boredom and inspire individuals to learn new things.

2.7 Lack of employee willingness to share knowledge

The tendency for individuals not to share knowledge has been identified as a barrier to KS in the context of social software (Pirkkalainen and Pawlowski, 2014). One of the main limitations is insufficient motivation to share or receive knowledge (Hong *et al.*, 2011); indeed, it is the most

challenging barrier for KS in the context of information security (Tamjidyamcholo *et al.*, 2014). When individuals do not anticipate any significant benefits from sharing knowledge, they are reluctant to play an active role in the process. Additional factors that contribute to a lack of willingness to share knowledge include geographical distance, bureaucracy, language barriers, resistance to change, conflict avoidance and loss of power (Bureš, 2003; Kukko, 2013; Riege, 2005, 2007).

2.8 Lack of employee awareness of KS

Lack of awareness has also been identified as a barrier to KS (Kukko, 2013; Richter, 2013; Riege, 2005, 2007; Pirkkalainen and Pawlowski, 2013, 2014). Therefore, employee awareness of knowledge-transfer processes is an important element of KS (Ismail and Yusof, 2010). Employees may be aware of the problems but not the solutions (Hong *et al.*, 2011). According to Riege (2007), employees should be aware of the requirements and knowledge gaps of the other employees, teams and organisations who are receiving the knowledge. Employees, including senior managers, must be aware of the importance (Van den Hooff *et al.*, 2003) of an effective KS culture in an organisation. However, in many organisations raising awareness of the benefits of KS is a challenge (Zahedi *et al.*, 2016). Communicating about the company's security policy and developing awareness programmes are two means of raising employee awareness of KS in the context of information security (Flores *et al.*, 2014).

2.9 Lack of trust in colleagues

Trust in others is a key element in the process of KS (Ardichvili *et al.*, 2003; Hashim and Tan, 2015; Riege, 2005; Sun and Scott, 2005; Usoro *et al.*, 2007). Conversely, it is speculated that lack of trust is a barrier to distributive KS (Pirkkalainen and Pawlowski, 2014). From the perspective of social exchange theory, Homans (1958) claims that individual employees exchange knowledge and ideas through a process of social interchange. Social interchange is categorised by indeterminate personal responsibilities, fundamental rewards and trust (Huang *et al.*, 2011). In KS, social exchange occurs when individuals co-operate in the process of knowledge transfer. Lack of trust can take the form of interpersonal distrust, distrust in the organisation (McLaughlin *et al.*, 2008; Riege, 2005, Sun and Scott, 2005), distrust in the team's values (Sun and Scott, 2005) and distrust in the knowledge received from other employees (Hong *et al.*, 2011; Riege 2007). Kukko (2013) maintains that lack of trust is more likely to arise when an organisation recruits new employees.

To summarise, the extensive review of the literature (Table I) has revealed three main findings. First, nine factors are necessary to facilitate effective KS: adequate learning opportunities; feedback on performance; sufficient information-sourcing opportunities and an efficient ICT infrastructure; leadership support; a strong KS culture; job rotation; employee willingness; employee awareness; and trust in colleagues. If these factors are not present, KS is hindered in organisations. Second, organisations lack effective KS processes in the context of information security. Third, there is a need for research that identifies the barriers to KS in the prevention of identity theft in online retail organisations. Despite the large number of studies on KS, there is a lack of research in the context of preventing identity theft. Therefore, this study investigates the existing barriers to KS in preventing identity theft in online retail organisations and suggests effective solutions for removing those barriers. It aims to find simple but comprehensive answers to the following questions, which have not yet been addressed in the literature:

- (1) What are the major barriers to KS for the prevention of identity theft in online retail organisations?
- (2) How can organisations overcome these barriers?

3. Research methodology

The main sources of data are documentation, archival records, interviews, direct observations and participant observation (Yin, 1994, 2011). This research adopted a case study approach, which is appropriate when a researcher seeks to gain a comprehensive understanding of a situation (Merriam, 2001). According to Yin (1994), the case study design must have five components: the research question, its propositions, its units of analysis, a determination of how the data are linked to the propositions, and criteria to interpret the findings. Yin (1994, 2011) points out that case studies are the preferred strategy when "how" and "why" questions are posed. Therefore, this approach is suitable for this study given that its key purpose is to gain an understanding of factors that influence how effectively employees share knowledge about identity theft, rather than to make generalisations or prove underlying hypotheses.

The case study approach includes data collection, data analysis, and reporting and presenting the results of the analysis (Yin, 2011). This research used several data-collection methods: analysis of internal documents from the selected organisations (including memos and survey reports);

analysis of the organisations' websites; an investigation of news about the organisations in print and electronic media; and interviews with employees.

Both internal and external documents from the online retail organisation were analysed. During site visits, 60 short memos and email conversations and 45 internal policy and working procedure documents were collected from the case companies. The set of internal procedure documents included secure communication, network security, computer protection and data encryption. Using the archival analysis method, these documents were examined in order to understand the organisation's existing KS processes for identity-theft prevention. The analysis focused on any evidence of identity theft, reasons for stealing data from individuals and the organisation, the steps taken to overcome these problems, and existing KS policies and processes for preventing identity theft. The external documents investigated included news reports on the organisations published in print and digital media, including Cifas, *CCR Magazine*, the BBC, CNN, the *Guardian*, the *Telegraph*, and others. These reports were examined for any evidence of or clues about identity theft and its prevention. Furthermore, the websites of the selected organisations were studied, focusing on publications about KS and the prevention of identity theft.

The qualitative method used also included interviews. These are effective for illuminating issues and arriving at explanations; for example, by exploring meaning (Gillham, 2000). Researchers may use this approach to scrutinise issues related to a variety of employee operations (Creswell, 2013). Therefore, interviews were conducted with individual employees to identify how they experienced concerns about KS in the context of preventing identity theft. Initially, the researchers conducted a review of the related literature to assess the extent of the work on KS for the purpose of preventing identity theft and to identify the role of individual employees in sharing knowledge to prevent identity theft. Based on this analysis, a list of interview questions was developed. The interview questions were underpinned by the KS enablers framework proposed by Chong *et al.* (2011). A pilot study was conducted using eight semi-structured interviews with PhD research students in a relevant field at a UK university. Following the pilot study, irrelevant and duplicated questions were removed, the sequence of questions was altered, and the wording was amended to ensure clarity for participants.

The researchers conducted thirty-four semi-structured interviews with employees in three online retail companies in the UK: Company X, Company Y and Company Z (renamed for anonymity). These companies were selected because they sell and purchase products and services online. The employees ranged from senior managers to support staff, and they were working in teams and groups. Fourteen interviews were conducted in various departments in Company X. At Company Y, the researchers conducted twelve face-to-face interviews and one telephone interview. In addition, seven interviews were conducted with employees working at Company Z. Appendix 2 presents information about each of the three companies. Tables II, III and IV in Appendix 3 present details of the interview participants from each company. The semi-structured interviews were conducted face to face or over the phone and lasted for between 45 and 75 minutes. In some cases, additional questions were asked to clarify the interviewees' responses and obtain clear data for analysis. The sequence of the questions was also altered during the interviews depending on the responses of the interviewees. Before the data collection started, a confidentiality agreement was signed with the management of the company. The researchers obtained consent from each interview participant via email.

Thematic analysis was conducted using a qualitative coding process (Braun and Clarke, 2006). The data collected from employees in the three UK companies were coded to establish patterns. NVivo software and manual coding were used for the thematic analysis. Various nodes (codes) were generated from group participants' interview responses, which were based on the themes that emerged in the literature review. These themes included ICT infrastructure, employee willingness to share knowledge, employee awareness, trust of colleagues, job rotation, feedback on performance, information-sourcing opportunities, leadership support and KS culture. Once this had been completed, the data (i.e., all the grouped responses) were printed along with the interview transcripts and analysed manually. This involved a critical reading of all the responses in each node and sub-node.

4. Findings

This section presents the main findings of this study with reference to each of the nine barriers identified in the literature.

4.1 Lack of employee willingness to share knowledge

The findings indicate that in two of the organisations studied, a lack of willingness to share knowledge is a barrier to KS for the prevention of identity theft. Employees in company X only shared knowledge within their own department for the purpose of preventing identity theft; they were not willing to share

information with colleagues working in non-technical departments. One participant from the company stated: "I can only share any type of knowledge with the people I work with. I don't discuss it with people who work in other areas of the business." (R06, Company X).

Similarly, employees in Company Z were willing to share knowledge in their own department only. One respondent stated: "I am happy to discuss with my friends who work here, but I won't share any type of knowledge outside this department." Another respondent expanded on this: "I don't share it [knowledge] with others and I am not willing to share knowledge with them. It is not the policy of the company." (R10, Company Z).

However, in Company Y employees were willing to share knowledge with colleagues in other departments: "I am happy to share the knowledge with other people in the company. It helps to increase the knowledge of others, and mine too." (R10, Company Y). Therefore, at Company Y, unwillingness to share knowledge for the purpose of preventing identity theft is not a barrier.

One reason employees at Companies X and Z were unwilling to share knowledge outside their own departments was the absence of a supportive environment for this activity. No rewards or incentives were offered for sharing knowledge with others; therefore, individuals were unwilling to share it.

4.2 Lack of employee awareness

In all three companies, there was a lack of awareness of the existence of KS for the purpose of preventing identity theft. A participant from Company X said: "I don't know about the KS for ID theft prevention." (R11, Company X). Participants from Company Y and Company Z were also unaware of their companies' knowledge-transfer process for preventing identity theft:

I do not know about the process of KS. Actually, nobody told me about it. (R09, Company Y)

I am not aware about ID theft prevention KS. Actually, we don't do it. (R03, Company Z)

I am not aware of ID theft. Well, I don't know about those problems. (R07, Company Z)

Therefore, this study did not find any evidence of KS for the purpose of preventing identity theft. This implies that there is a lack of focus on creating a supportive environment that would enhance employees' awareness of identifying and preventing identity theft.

4.3 Inadequate learning opportunities

The three companies provided various learning opportunities to their employees, including training. However, the participants from Company Y had not received any training on identity theft:

There is no mention of ID theft. (R06, Company Y)

I do not think there is a specific training for that here that we receive. (R02, Company Y)

There is no training for ID theft prevention in the company. (R05, Company Y)

All the companies provided training to new employees about the company's ICT infrastructure and its working procedures; for example, how to interact with the company's computerised systems, what the working procedures are, and how to deal with customer data. However, training on using effective methods to prevent identity theft was lacking in all three companies. Training on identity theft was provided only to employees from technical departments, and it was limited to the technical aspects of preventing identity theft.

4.4 Lack of trust in colleagues

In Company X, employees trusted colleagues in their own department but did not trust individuals or teams outside their department. Respondents from the company were reluctant to share their knowledge of identity-theft prevention with these colleagues: "I cannot share knowledge with people who are not here in this department. I don't trust others outside my working unit." (R14, Company X). Due to this lack of trust at an inter-departmental level, employees from non-technical departments were not able to obtain the advantages from the KS process that would enable them to prevent

identity theft within the company. Therefore, lack of trust among colleagues was a barrier to the process of KS for the purpose of preventing identity theft in Company X.

Although KS for identity-theft prevention was not a focus in Company Y either, individuals trusted each other enough to share knowledge about routine jobs and day-to-day activities. One respondent said: "I trust people working there with me. I would like to discuss ... anybody working here in the company." (R10, Company Y). Employees were willing to share knowledge with colleagues inside or outside their own departments. Illustrating this, one participant stated: "There are no particular restrictions on sharing knowledge with other departments." (R13, Company Y). The findings from the interviews suggest that while there is no evidence of a lack of trust in Company Y. However, the company does lack a supportive environment for KS to prevent identity theft. Therefore, there is a need to enhance the KS process with a focus on preventing identity theft.

The interview responses from employees in Company Z showed that they trusted each other at a departmental level, sharing knowledge with individuals and teams in their own departments. However, employees working in technical departments did not trust employees working in non-technical departments. Therefore, there was a lack of trust among colleagues in Company Z.

4.5 Lack of an efficient ICT infrastructure and insufficient information-sourcing opportunities

In all three companies, the existing ICT infrastructure was efficient and various information-sourcing opportunities were available to employees. However, none of the companies used those information-sourcing opportunities to enable KS for the purpose of preventing identity theft. Employees in each company used the ICT infrastructure for their routine work and to communicate business tasks, but there was no focus on using that infrastructure to prevent identity theft. Therefore, none of the companies studied used information-sourcing opportunities or the ICT infrastructure to prevent identity theft. This represents a barrier to KS for preventing identity theft in online retail organisations.

4.6 Lack of leadership support in KS

The management of Company Y appeared to be supportive and to share information with employees, regularly sending group emails about general issues and task completion. One participant stated: "A cascade of information is done via email, and so there are regular email briefings that come out." (R03, Company Y).

Employees expected the company leadership to provide guidance and education in the following areas: identity-theft issues; how to prevent identity theft; and how to protect personal and organisational knowledge from those who are not authorised to access it. The participants said that they needed KS resources to be made available to them and for business systems to be enhanced for the prevention of identity theft. One participant stated that they expected the following support:

Support regarding training, education and guidance. Moreover, just making resources available, making business systems robust enough to protect from ID theft and promote KS from that perspective. (R01, Company Y)

The participants also said they needed a company policy on identity-theft issues and protecting identity:

If there is a policy in the organisation about KS or ID theft, then certainly everyone will be expected to comply with it. I think there will be top support, high-level support certainly. (R08, Company Y)

Although the company leadership was supportive for KS among employees, the management team did not focus on issues related to preventing identity theft. Most of the employees interviewed stated that they required education to increase their awareness of identity-theft issues and to secure their own – and the organisation's – knowledge. Employees needed support from management to be able to create a KS environment and build a culture of KS for the purposes of preventing identity theft.

4.7 Weak KS culture

As described previously, the research revealed that Company X lacked a supportive culture for sharing knowledge at the inter-departmental level for preventing identity theft: employees share this information within their own departments only. Hence, a weak KS culture in the company acted as a barrier to the use of KS to prevent identity theft.

On the other hand, Company Y had a strong culture of KS. Employees were trusted and shared knowledge with each other in their department. One participant responded: "I trust my friends, actually we help each other in our department." (R03, Company Y). Another participant from Company Y said: "We have a good culture of information sharing. We are quite good at trusting

others. Well, I can trust all the employees here working in this company, and I should do it as others trust me.” (R11, Company Y). Nevertheless, the analysis of the data revealed an absence of a culture that supports KS for preventing identity theft in Company Y. This is because employees were not sharing their knowledge of preventing identity theft. Therefore, a weak KS culture was also a barrier in Company Y.

Company Z had a culture of KS at the departmental level. A respondent from the company stated: “I share what I do here in my department. Others also do it here.” (R05, Company Z). However, employees did not share their knowledge with colleagues in other departments: “Actually, we do not discuss with others who do not work with us.” (R02, Company Z). Therefore, Company Z had a weak culture of KS, which was a barrier to the process of preventing identity theft.

4.8 Lack of feedback on performance

The findings highlighted that feedback on performance was important in the companies. One participant stated: “That is the bulk of the managers’ job; we have performance management” (Company Y). However, none of the three organisations had a process for evaluating employees’ performance on KS for the purpose of preventing identity theft:

We are not evaluating the performance for ID theft prevention KS. And there is no feedback for that. Or I can say our evaluation is not about KS to prevent ID theft. (R04, Company Y)

ID theft prevention is not in that criteria. It is the evaluation of our job we do here, not the KS for it. (R10, Company Y)

No ID theft is mentioned in our performance review. (R04, Company Z)

As for ID theft prevention and KS, we are not evaluated on that. (R04, Company Z)

Managers in the companies arranged monthly one-to-one meetings with advisors to obtain information on employees’ performance. The three companies evaluated the performance of their employees twice a year. The respondents stated that there was only one tool for evaluating employees’ performance: an e-learning system providing information about evaluating performance in general. However, the participants stated that it is vital to provide feedback on the performance of work activities.

4.9 Lack of job rotation

The research did not find any job-rotation processes in Company X, and all the participants from the company confirmed that there was no job rotation. Not rotating jobs creates a barrier to the process of KS and does not enhance the knowledge of employees or teams. It leaves individuals to learn from their own experiences only, rather than also learning from those of others.

On the other hand, Company Y frequently used job rotation. This meant that employees were able to increase their knowledge while working in different teams and departments in the company. Employees learned about new systems and gained knowledge from the experiences of colleagues in other departments. They learned from doing new tasks as part of a different role:

I am happy to work in new environment and with new people. I learn from them and it leaves me no chance of failure. So I am happy with it. (R11, Company Y)

It is useful for gaining knowledge of different areas in the company. (R07, Company Y)

However, Company Y did not rotate jobs specifically for the purpose of increasing employees’ knowledge of preventing identity theft. Therefore, there is still a barrier to KS in the context of preventing identity theft.

The investigation of Company Z’s internal documents revealed no evidence of job rotation in the company. This was confirmed by an interview participant, who stated: “We do not have any policy of job rotation in the company here.” (R05, Company Z). Furthermore, another respondent did not see the value of job rotation: “I gain knowledge from my things I experience here and I do not need to go anywhere and ask how to do my work.” (R07, Company Z). These responses revealed that employees were learning from their own experiences only, with some of them doing the same job for many years.

5. Discussion

The primary aim of this research was to investigate the main barriers to KS for the purpose of preventing identity theft. There were two main research questions:

- (1) What are the major barriers to KS for the prevention of identity theft in online retail organisations?
- (2) How can organisations overcome these barriers?

By answering these questions, this research sought to fill the gap in the literature and help online retail organisations to prevent identity theft by improving their KS practices. Identity theft is becoming an increasing concern, with rising numbers of cases. Through the extensive literature review (see Table I), nine main barriers were identified. Data were collected from thirty-four semi-structured interviews and an examination of the internal documents of the companies under study. The research has extended the KS enablers framework proposed by Chong *et al.* (2011) by identifying nine major barriers to sharing knowledge in the context of preventing identity theft.

To answer the first research question, based on the findings from analysing the data collected in this research, the framework shown in Figure 1 is proposed. This framework includes the major barriers to KS for the prevention of identity theft in online retail organisations. It is based on the reconceptualisation and extension of the KS enablers framework proposed by Chong *et al.* (2011). The proposed framework includes three additional barriers to KS: lack of employee willingness to share knowledge; lack of employee awareness; and lack of trust in colleagues. It proposes additional relationships between these barriers by acknowledging the central role of leadership support in the process.

<Figure 1 here>

In response to the second research question, the findings have revealed that leadership support plays a central role in increasing employee awareness of KS and encouraging them to share their knowledge for the purpose of preventing identity theft. Leadership support is also key to creating a supportive culture of KS for the prevention of identity theft, providing an efficient ICT infrastructure, supporting trust among colleagues, providing feedback on performance related to preventing identity theft, and providing training and support (learning opportunities). This agrees with previous studies which have highlighted that leadership support is an important enabler for KS in organisations (Chong *et al.*, 2011; Muethel and Hoegle, 2016; Jones *et al.*, 2006). It is also consistent with previous studies which explained that the lack of efficient leadership can undermine an effective KS culture, the efficiency of the ICT infrastructure, training and learning opportunities, individuals' motivation to share knowledge, and their trust in each other (Aga *et al.*, 2016; Riege, 2005, 2007; Sun and Scott, 2005). Hence, there is a need to carefully select the right individuals to work in the organisation at the recruitment stage (Kukko, 2013). A lack of leadership support can inhibit the creation of a culture that encourages KS. Leadership teams need to foster a culture that is not restrictive and build a supportive environment for KS (Chuang *et al.*, 2016). Without a supportive culture, individuals are discouraged from sharing their knowledge. A KS culture is a significant factor because it controls the effects of other related variables, such as the available technology and techniques for effective KS.

Leadership support influences job satisfaction and willingness to commit to the organisation among employees. The results of this research have confirmed the findings in the literature on the significance of employees' willingness to share knowledge. In addition, the findings have revealed a lack of awareness of KS among employees in the companies under study. These findings are consistent with those of previous studies that investigated how a lack of awareness can affect KS. For example, employees may be unaware of the value of the knowledge available to them or of the benefits of sharing that knowledge (Kukko, 2013). They may not be aware of the solutions to problems associated with identity theft (Hong *et al.*, 2011), the purpose and use of knowledge (Riege, 2007) or the knowledge available from other employees (Riege, 2007). Indeed, the management may be unaware of the importance of this knowledge (Van den Hooff *et al.*, 2003).

The findings indicate that in the companies studied there is a lack of opportunity for employees to learn about KS in the context of preventing identity theft. Employees should be given opportunities to learn about the core knowledge to be transferred and the skills required to use ICT to share their knowledge. Such factors were found to be important in previous studies (e.g. Ardichvili *et al.*, 2003; Pirkkalainen and Pawlowski, 2013). Hence, the lack of efficient ICT can discourage KS in the organisation. Moreover, an inefficient ICT infrastructure reduces employees' motivation and willingness to share knowledge and hinders learning opportunities.

The findings have revealed a lack of job rotation in two of the studied companies. Job rotation plays a vital role in enhancing individuals' knowledge (Aga *et al.*, 2016; Huang and Pan, 2014; Ortega, 2001). It is especially important for positions that require employees to gain new knowledge through personal experience (Abdullah *et al.*, 2016; Ardichvili *et al.*, 2003); for example, jobs that

involve dealing with changing conditions in a turbulent environment. In addition, feedback on performance in preventing identity theft can be provided for various purposes: bringing the outcomes of activities or processes into focus; providing information when workers move away from primary goals; helping them to set new goals or adjust their current goals; and guiding their performance of activities. It also promotes critical reflection and brings about new approaches (Gabelica *et al.*, 2012).

6. Theoretical contributions and practical implications

This study provides theoretical contributions and has practical implications. There are three main theoretical contributions. First, this research has bridged a gap in the literature by providing a comprehensive framework for a full understanding of the barriers to KS for preventing identity theft in online retail organisations. Although the topic of KS has been discussed in previous studies in various contexts, this study is the first to address barriers to KS in the context of preventing identity theft. Second, the proposed framework has extended the KS enablers framework developed by Chong *et al.* (2011) by identifying additional barriers to KS in the context of preventing identity theft. Third, the results revealed that the most significant barriers to KS in preventing identity theft are lack of employee willingness to share knowledge, lack of employee awareness, and lack of trust in colleagues. These three additional barriers have been integrated into the framework.

The findings also have important implications for practitioners. First, the findings are useful for managers who wish to identify an organisation's key barriers to KS for preventing identity theft. This is important to reduce the number of cases of identity theft in the UK and increase customers' trust in the companies they deal with. Second, the three online retail companies studied demonstrated weaknesses in the context of KS for preventing identity theft. Hence, these companies should consider improving their current practices by following the specific recommendations set out in Table V in Appendix 4. Third, the recommendations may be useful to other online retail companies. As this research presents the results of a qualitative study, the recommendations apply most specifically to the organisations under scrutiny. However, online retail companies often have similar organisational structures and business processes, allowing some generalisation of the findings to other companies.

7. Limitations and future work

The findings of this study are based on three online retail companies in the UK. Therefore, further research is required using an empirical method and focusing on larger numbers of organisations. This study is limited by the use of the case study approach, the small number of interviews conducted, the number of internal company documents examined, and the lack of availability of existing literature and data from the organisations due to confidentiality concerns. Therefore, future research can adopt quantitative research methods to test the validity of the research outcomes across the whole online retail sector. The researchers carried out this study in the UK's online retail sector. Further research is recommended for the expansion of this study to include other countries.

8. Conclusion

This study has provided important contributions in terms of theory and practice. In terms of theory, the research extended the model proposed by Chong *et al.* (2011) by integrating three new barriers to KS in the context of identity fraud preventions in online retail organisations. These are lack of employee willingness to share knowledge, lack of employee awareness, and lack of trust in colleagues. In addition, the research highlighted the key role of leadership in this process. The research has several further implications in terms of practice, and recommendations were provided to managers who wished to reduce the number of cases of identity theft in online retail organisations. Future research can collect data from more companies, use a larger number of interviews and collect quantitative data through questionnaires to ensure the generalisability of the findings.

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