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Knowledge is of no value unless to be shared. A synthesis of knowledge-sharing drivers in born-globals

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Abstract

In recent years, technological advancements have enabled born-global firms to build on their knowledge-based resources and more effectively contribute to the international economy. Hence, knowledge management practices have become crucial capabilities of born-global firms. Therefore, this paper strives to develop and validate drivers and indicators that impact such firms' knowledge sharing. In doing so, we focus on the born-globals originating from the context of Australia and take advantage of exploratory analysis in two complementary studies. Accordingly, using a Delphi analysis, we first employ a panel of experts consisting of founders and owners of born-global firms to explore key knowledge-sharing (KS) drivers. Subsequently, confirmatory factor analysis (CFA) and structural equation modelling (SEM) will validate the identified drivers. In this regard, the results of the three-round Delphi analysis led to the identification of the 12 KS drivers in three categories of individual, technological and organisational dimensions. Also, the validation phase (CFA synthesis) ended with the retention of 36 items for the 12 drivers. Accordingly, this research reveals significant findings that contribute to enriching the prior KS studies in born-global firms. For instance, we highlight that in born-global firms, individuals are more likely to share their knowledge with those who are more reliable and trustworthy. Overall, we highlight how effective KS drivers can influence born globals features.

Keywords Born-globals · Knowledge sharing · Organisational drivers · Technological drivers · Individual drivers · Delphi method

Introduction

The phenomenon of "born-global" firms (BGFs) has emerged in the international business debate since the early 1990s. It has expanded dramatically to become one of the most important lines of international business studies (McDougall et al., 2003). This rapid expansion is rooted in structural change and technological progress, which

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caused innovation in international business methods (Cavusgil & Knight, 2015). Born global firms are recognised for their early internationalisation and fast growth, which markedly sets them apart from other new ventures (Knight et al., 2004). BGFs operate in cross-border markets from the launch of their operations and before serving customers in their local market. Recent technological advancements have provided a wide range of opportunities that enable many small- and medium-sized enterprises (SMEs) to enter international markets as BGFs (Denicolai et al., 2021). Although international markets provide BGFs with more commercial benefits, compared with non-BG firms, they have seen to be highly challenged locally and globally. Hull et al. (2020) point out that BGFs face many challenges due to their being "born to be international" in a global market from their establishment, compared with other firms that approach their internationalisation strategy step-by-step. This issue highlights the need to pay more attention to the problems with available tools and resources. Knowledge is one of these resources, which could positively strengthen BGFs to overcome challenges.

Knowledge is so crucial for BGs that Knight and Cavusgil (2004 , p. 124) define BGFs "as business organisations that, from or near their founding, seek superior international business performance from the application of knowledge-based resources to the sale of outputs in multiple countries". Instead of accumulating knowledge and capabilities in a continuous learning process, BGs often use external resources (e.g., foreign market knowledge) as a foundation of their accelerated internationalisation. Knowledge has a dynamic role in the international activities of born-global firms, and some scholars believe that knowledge accelerates business adoption in the international environment (Dewitt et al., 2022 ; Johanson & Vahlne, 2003 ; Onjewu et al., 2023).

BGs are the outcome of a significant update to the Uppsala approach, which explicitly emphasises the influence of network position and trust-building on knowledge sharing. Johanson and Vahlne (2009) argued that knowledge is a crucial driver of internationalisation, therefore, founders and managers with relevant experience and knowledge in business internationalisation can drive it more quickly and effectively. Furthermore, according to Autio et al. (2000), born-global firms enjoy advantages from learning compared to more established and mature firms that may be contending with organisational inertia. They explain that this is because top management with more robust absorptive capacity, stemming from their prior international work experience and knowledge can accelerate. Therefore, BGs need to scrutinise the knowledge processes, from creating and capturing to sharing and applying, and to recognise the impressive drivers in managing the knowledge.

Meanwhile, sharing is a fundamental phase in which BGs optimise KM processes to make knowledge available for those who need it in a timely, useful, and effective manner, thus increasing the value of knowledge. However, ineffective KS affects SMEs, including BGFs, by endangering their position in competitive markets. This ineffectiveness is rooted in the lack of proper understanding of the KS drivers. Moreover, although ineffectiveness in KS is a common problem for SMEs, the inherent features of firms (e.g., their business scope and size) impact on various drivers. Indeed, KS differs for firms that operate in domestic versus global markets.

Therefore, even slight distinctions among BGFs and other firms, relevant to the cross-border operational contexts, can significantly explain the differences in the internal organisational processes, such as KM. Hence, if a driver is essential for a group of SMEs with the same characteristics, it also has the same impact on others.

On the other hand, it is critical to understand the capabilities, opportunities, and weaknesses of knowledge flow. Such an understanding can be instrumental in encouraging the BGFs' founders, owners, and managers to motivate new entrepreneurs (Popkova et al., 2021). Furthermore, from a practical vantage point, such an understanding can help budding entrepreneurs have a much more complete vision of KS drivers that are fundamental for operating and conducting a business.

Accordingly, given the literature gap and the lack of empirical investigations and considering the critical role of BGFs, this study provides an exploratory analysis of the influential KS drivers in BGFs in two phases. In the first phase, via a Delphi analysis, a panel of experts consisting of BGF's founders and owners were asked to predict and explore key factors in KS. In the second phase, we employed a sample of managers of BFGs to validate the outputs of the first phase using confirmatory factor analysis (CFA) and structural equation modelling (SEM). The results enrich the prior KS and BGF studies by responding to the need for more exploratory analysis of KS drivers in BGFs. Also, our findings provide additions to the KM debate by highlighting the different impacts of KS drivers in BGFs and calling for more investigation of other variables based on our sorted drivers.

Furthermore, this paper contributes to a better understanding of the impact of the specific factor of KS and the extent that different BGF features change the effectiveness of KS drivers. From an empirical perspective, this study helps to shape the KMS in BGF. Owners, founders, and managers can develop KS inside the organisation by tracing the knowledge flow and empirically identifying the pros and cons of sharing systems. Furthermore, local and state authorities and macroeconomic planners can apply the findings of this study in KS consulting and supporting BGFs to design mid- and long-term exporting strategies.

Born-global firms and knowledge

In the international business literature, the resource-based view (RBV) and the knowledge-based view (KBV) are fundamental in explaining the cause of firms' success or failure (Abbasi Kamardi, et al., 2023; Jafari-Sadeghi et al., 2021). These theoretical concepts have been frequently applied to explain global markets, business internationalisation, and international trade (Dhanaraj & Beamish, 2003; Katsikeas et al., 2000). According to RBV, a firm's internal resources and capabilities are what it primarily relies on for its advantages (Barney, 1991; Grant, 1996). Barney (1991, 2007), and inimitable (Newbert, 2007). The resources and capabilities that make an organisation special, according to DCV,

must be simultaneously valuable, rare, imperfectly imitable and non-substitutable. Accordingly, DCV has been proposed to explain how a firm can rely on its ability to create, maintain, and renew its competitive advantage in turbulent environmental conditions.

Knowledge is emphasised in KBV and RBV as a superior capability. Knowledge is the central element in the learning process, which consists of acquiring, integrating, and exploiting it (Cohen & Levinthal, 1990). A common fact in business is that knowledge is critical for long-term strategies and provides many advantages to enterprises (Rezaei et al., 2021a). However, GBs have distinctive features that make knowledge and KS more prominent. Generally, it can be assumed that six characteristics of BGs distinguish them from other firms. These distinctions are not restricted to the appearance (e.g., the size, age and sector) of a business but they characterise business processes and how firms consider and care for their resources to drive competitiveness. That is why intangible resources such as knowledge, information, skills, and experiences become more significant for BGs.

The first and perhaps most outstanding characteristic is the business activities scope. BGs conduct their global business as soon as or soon after being founded, which means BGs are created to be international in business. They might not begin international business activities, such as exporting products and services, but they internationalise within a couple of years after their establishment. Being global provides more opportunities for firms to expand their trading with fresh, new global collaborators and foreign partners for cooperation and further investment. In addition, being born for a large worldwide market requires access to potential resources that support firms in competing with larger and more robust businesses while facing unexpected political, social, and cultural challenges. Therefore, BG firms must seek the latest information, experiences, and skills from their employees, customers, global collaborators, and foreign partners to monitor the market and smooth its fluctuations. In addition, they must have good knowledge of competitors, closely scan market demand, and provide their experience and skills to employees who need that knowledge at a specific time and place. Therefore, accurate and timely receipt and dissemination of knowledge in these companies is essential.

Compared to large multinational firms, BGs have far fewer financial, human, and tangible resources. Therefore, SMEs, especially BGs, regardless of the scope of their business and activities, should develop their business strategies based on their intangible resources, meanwhile, knowledge is their most necessary leverage and reliable resource for maintaining competitiveness and sustainability (Escandon-Barbosa et al., 2019; Rezaei et al., 2020; Sadraei et al., 2022). Another unique feature of BGs is pioneering innovation. Knight and Cavusgil (2004) concluded that internationalisation requires innovation, and global firms must be more creative than local firms. This inherent feature of BGs explains their enthusiasm for engaging in innovative businesses such as new technology enterprises. However, recent evidence suggests that the born global phenomenon has spread beyond the technology sector into other innovative businesses (Tanev, 2012). Innovation requires new ideas, creative skills, and profound experiences; therefore, KS is its fundamental instrument. KS provides experience when creating or improving products and services of value, and it is a critical resource for

developing capabilities. According to Kremer et al. (2019), innovation without KS is almost unreachable.

The next particular characteristic of BGs is their production strategy. Tough competition is a consequence of globalisation; accordingly, BGs adopt differentiation strategies in methods and products that support them in targeting niche markets. These firms mainly focus on stimulating customer loyalty by uniquely meeting particular needs. This means BGs develop their marketing strategies for specialised and customised products that customers increasingly demand (Efrat et al., 2017). In the meantime, the essential tools to meet customer needs for specific and sometimes exceptional products are the skills, abilities, and information the company has absorbed over the years from various internal and external sources. To this end, BGs need to run strategies for sharing integrated knowledge among their employees to quickly meet customer needs for the ordered product.

The global market is the competitive arena of many firms. This shoulder-to-shoulder competition has positioned BG firms at the leading technological edge of their industry. BGs are convinced that there is no chance of surviving if they do not develop new products or services that are better designed and of higher quality than the competitors. Therefore, as the fifth feature, BGs emphasise superior product quality. To ensure production is high quality, BGs are required to expand their research and design process which absorbs and shares experts' information and knowledge. Furthermore, they need to develop their R&D and marketing strategies to reduce decision-making costs in uncertain situations and to have the latest knowledge on new technologies that enclose upcoming markets (Amoozad Mahdiraji et al., 2021; Efrat et al., 2017).

Having independent international intermediaries is the sixth unique feature of BGs. The particular attribute forces firms to have intermediaries that facilitate their trade and business activities. This feature is connected with BGs expanding business strategies to create an external, independent intermediary network to distribute their products in foreign markets (Garousi Mokhtarzadeh et al., 2021; Monferrer et al., 2015). In addition, these independent intermediaries increase BGs' flexible capabilities to perform international business, including discovering, joining in, or withdrawing from global markets relatively quickly and easily (Jafari-Sadeghi et al., 2023). BGs need these special allies to introduce and present their products and sell processes for aftersales services. Therefore, they should be up-to-date on market information and knowledge and exchange information with their international colleagues (Felzensztein et al., 2015; Herath & Karunaratne, 2019; Singh et al., 2022). Communicating vast amounts of information requires a well-developed sharing system in BGs that can assess and process reserved information and provide individuals with timely knowledge.

Nevertheless, many BGs do not receive these benefits. Why? The reason lies in a process weakness of recognising the KS drivers.

KS drivers

KM is a complicated set of processes, from creating or acquiring to using and operating knowledge. Meanwhile, the sharing process is one of the most influential and challenging among all KM processes, and it requires a high focus on its procedure,

any factors that run it, and any possible challenges which weaken it. According to Edwards et al., (2020), every KS system analysis should consider three main areas that make KS problematic and complicated. These areas, which are individual, organisational, and technological, are the platforms of any challenges, barriers, and drivers of KS. Generally, an effective KS system is the result of the best and most optimal potential combination of these three factors in the organisation.

Knowledge flows from individuals (employees are the source and keepers of knowledge) and they possess explicit knowledge, ideas, experiences, and beliefs (Durst & Edvardsson, 2012). Therefore, their personalities impact their willingness or unwillingness to share their knowledge. Moreover, even with full individual participation, knowledge must be supported by organisational processes, such as policies and procedures, to be shared (Lin, 2013). And meanwhile, technology is the facilitator for increasing the efficiency of the knowledge-sharing processes to provide organisations with the best advantage of owned resources. Therefore, in any KS analysis, these three main categories stand at the top of significance.

Individual drivers

The vital knowledge resource is people who own and create ideas, experiences, and beliefs. Davenport and Prusak (1998) opined that individuals are the most important party for exchanging experiences, skills, opinions, information, and thoughts. Although motivation and expertise are essential in KS participation, it is not always easy to predict when and why employees share their knowledge. KS is a social phenomenon concerned with interpersonal relationships and social interactions (Rezaei et al., 2020). According to behaviour theory, an individual's willingness to engage in inter-organisational activities determines the intention to share knowledge (Lee et al., 2010). This desire to participate in sharing practices depends on personal characteristics, which are referred to as the individual dimension (ID) of the KS drivers.

IDs include the individual characteristics that influence someone to desire to participate or not participate in KS, e.g., interpersonal trust, reciprocal relationship, and personal motivation (Holste & Fields, 2010; Seba et al., 2012). Lin (2007) described ID as individual attitudes, subjective norms, and perceived behaviours. However, he explained that IDs are not restricted to causes; therefore, each factor that is associated with personal intention could be counted as an ID for KS. Deci and Ryan (2000) considered a goal-based and reason-based scale and they divided IDs into two types of motivation: extrinsic and intrinsic. They explained intrinsic drivers are inherent to individuals, are not affected by any external pressure or reason, and are satisfied by the enjoyment of performing the task itself or helping others. In contrast, extrinsic incentives are dependent on external causes, such as monetary rewards and career advancement, and they lead to desirable outcomes.

Trust is an essential factor in interpersonal relationships. Through cooperation and solidarity between group members, trust develops and promotes team spirit and directly and indirectly affects the group's efficiency and, ultimately, the organisation's performance. Individuals will be more willing to share helpful knowledge if they have trust. Usually, organisations with problems in their transferring procedures

will find that lack of trust is the leading cause (Mooradian et al., 2006). Connelly and Kelloway (2003) found that employees will share their experiences, information, and skills if they trust the recipients. Furthermore, in numerous studies (Hau et al., 2013; Holste & Fields, 2010; Seba et al., 2012), trust has been an essential interpersonal factor for promoting verbal or nonverbal communication and exchanging skills and experiences.

Another personal element in interpersonal interactions is mutual expectations. Generally, individuals disseminate knowledge when they expect to receive it in return; this feature is called reciprocity. People psychologically prefer two-way communication to one-way so that information, experiences, skills, and ideas flow directly. This is associated with the workplace atmosphere of receiving and sending. Tamjidyamcholo et al. (2013) found that when participants in their study perceived the value of knowledge to be exchanged, a sense of reciprocity was created in them, which means they expected to receive knowledge when they shared their valuable knowledge. The KS is a two-way exchange of knowledge, in which transferring and receiving information happens in parallel (Hsu et al., 2007; Sedighi et al., 2016). There are two kinds of reciprocal attitudes in an organisation: direct, when employees expect to receive knowledge directly from someone who received it; and generalised, in which employees expect to receive knowledge in return for their act of sharing without considering who was the receiver (Rezaei et al., 2022b).

Some authors consider those factors driving the employees' willingness to participate in KS processes. Accordingly, although trust and reciprocity are fundamental for KS, motivations are the more potent factors when regarded from an individual viewpoint (Barner-Rasmussen & Aarnio, 2011; Paulin & Suneson, 2012). These findings explained why the KS system acts inefficiently in some organisations when good interpersonal trust exists. Furthermore, Barner-Rasmussen and Aarnio (2011) proved when there are not enough motivators, employees do not share their knowledge. Therefore, it would be valuable to understand the motivators that persuade individuals to share their expertise and promote strategies that organisations can apply to enhance knowledge sharing. These motivations can target vast personal desires, from personal benefits to community-related benefits. For example, Amayah (2013) categorised motivations into three main groups: individual benefits, normative consideration, and community-related consideration. Individual beneficence includes various financial or non-financial advantages that a person expects to receive directly or indirectly for participating in KS. Managers' verbal or written appreciations, acknowledgements of colleagues, and supervisors' support are examples of motivations that can positively increase the desire to share experiences, skills, and information. Hislop et al. (2018) investigated effects of motivation and concluded that although KS is a voluntary act, it is vital for organisations to persuade personnel to participate in sharing practices. Some studies discussed motivations and explained that motivating people with outstanding personality characteristics influences their willingness to share experiences (Casimir et al., 2012; Wendling et al., 2013). Hung et al. (2011) conducted a study with students on the individual features of personal reputation feedback and found its positive impact on prompting KS practices. Wang et al. (2014) addressed the issue of personality in promoting KS; they found a direct positive relationship between extraverted personality and

engaging in KS processes. According to some studies, employees will considerably increase their contributions in KS if they discover their involvement in sharing practices would be precious and valuable for the group (AlShamsi & Ajmal, 2018; Au, 2004; Moser, 2017).

From an intrinsic motivational perspective, behaviours result from an individual, aroused by the need for competence and self-determination, interacting in an environment. These needs drive people to find ways to demonstrate their abilities in social interactions. Therefore, communications meet peoples' intentions for extroversion and position them on the path of sharing and moving experiences, skills, and information using tools to share and transfer knowledge. These intrinsic motivations are the individual intentions that convince employees to participate in KS, e.g., enjoying helping others, altruism, self-efficacy and being confident in self abilities, having good feelings, and giving value to others (Chennamaneni et al., 2012; Hung et al., 2011; Ma & Chan, 2014; Van Acker et al., 2014; Wasko & Faraj, 2005). In addition, these individuals care about others' rights and know access to knowledge is a common right (Goh & Sandhu, 2013; Wang & Wang, 2012), and they believe that group belonging and group contributions are vital to organisations (Edwards et al., 2020; Vuori & Okkonen, 2012). This group of people do not imagine sharing as a mere duty but that it as a pleasurable activity (Ma & Chan, 2014; Paroutis & Al Saleh, 2009).

Organisational drivers

Organisational drivers (ODs) arise from the organisation's features, such as structure, culture, governing and managing systems, leadership behaviours, and management support (Ali et al., 2019). ODs provide a helpful platform for better implementation of IDs, and they directly impact the efficiency of IDs in organisations.

The workplace environment features greatly influence employees. For instance, the organisational culture (OC), including the collection of values, beliefs, ideologies, symbols, and expectations shadows essential factors in promoting KS, such as employees' interactions and communications. The significant point in OC is its uniqueness in every collective structure that reflects the unique governing identity of that community, such as an organisation (Mojtaba, 2022; Al-Alawi et al., 2007). As Lee et al. (2016) believe, OC shapes individuals' views on KS and is a critical leverage for employees' final decision to share or not share knowledge. In the OC frame, the organisation is described as a "social community" with social values, such as supportive behaviour and collaborative mood that impact the members' (employees') cultural behaviour. Mukkamala and Razmerita (2014) emphasised that weakness in OC components, such as norms, values and objectives, or lack of perceived benefits, results in a decline in KS efficiency.

The learning culture is the next critical OC element, which influences the implementation of sharing processes. In an organisation where its members constantly follow learning processes, KS processes are more achievable (Ardichvili, 2008). By creating continuous learning processes, organisations encourage employees to receive new information, experiences, and skills gained from others. While

transferring specialised work concepts, this process educates them that learning is an essential indirect practice for KS. Another aspect of culture in an organisation is collaborative culture. Greiner et al. (2007) believe that teamwork orientation increases interaction and communication and fosters employees' learning and creativity; therefore, it supplies significant advantages for KS. Likewise, Davenport and Prusak (1998) indicated that a teamwork culture, both organisational and social, promotes employee relationships, encourages cooperative behaviours, and increases KS. In addition, organisations that accept the culture of trial and error encourage employees to experience teamwork, promote collective behaviours, and, finally, to have a greater possibility for knowledge exchange (Zhao & Anand, 2009).

The organisational structure (OS) is another factor in KM that significantly influences how KS behaviours are disseminated. OS describes the governing body in an organisation, how knowledge can be shared, the hierarchy in KS, and who manages the sharing processes. Meanwhile, two kinds of OS, centralised and decentralised, can have different results in KS practice success. However, according to some studies (e.g., Abili et al., 2011; Farooq, 2018), decentralised management is more efficient in encouraging employees to KS. Joseph and Gaba (2020) argued that a centralised structure leads to a corporate hierarchy and weakens KS by creating a sole vertical flow of knowledge, and that organisations need horizontal and vertical information flow. Abili et al. (2011) considered the different OS impacts and concluded that KS in an unconcentrated structure with less complex governance to run more efficiently. Wang and Noe (2010) found that efficient, decentralised structures are brought about by accessible and direct communication between workers and superiors, and they concluded that these kinds of relations are what a KS system requires to flourish. Aljuwaiber (2016) demonstrated that a less centralised structure has a positive effect on expanding KS practices. Huang et al. (2013) suggested open workspaces to managers for smoothing the knowledge flow paths. The decentralised structure also improves individuals' collectivity and group attributes, increasing interpersonal trust and enhancing knowledge sharing. Wang et al. (2014) considered the leveraging effect of communications networks on KS and concluded that encouraging employees to participate in informal meetings will show its impact on facilitating knowledge-sharing practices.

Moreover, although OC and OS are essential, some studies have stated that supportive approaches are vital for encouraging employees to participate in KS (Chen & Cheng, 2012; Wang & Noe, 2010). Accordingly, Rezaei et al. (2020) indicated that determining the organisation's vision and defining and declaring supportive strategies will boost the KS processes. These kinds of support are more than just a written, defined structure, like a corporate structure, they are uncomplicated and straightforward, inspiring individuals to improve their KS skills (Al Saifi et al., 2016; Wang & Wang, 2012). Lee et al. (2016) defined management support as consciously or unconsciously encouraging employees to participate in KS practices. Al Aufi et al. (2018) believe supporting supervisors' and directors' innovative activities and expanding the incentives offered to employees enhance their perceptions of the usefulness of KS and persuade them to exchange skills and experiences more. Lu and Yang (2015) illustrated that a job rotation policy helps encourage employees to participate in KS practices and effectively improves the sharing qualities and

quantities. Elenurm (2012) studied the impact of the open-space strategy on KS and concluded that management support of the open-space policy leads to increased involvement in the sharing process. Salis and Williams (2010) investigated interpersonal meetings and employees' knowledge-exchanging habits. Their findings indicated that KS productivity is positively associated with informal staff sittings; therefore, they advised managers to consider these meetings important and support holding them regularly and continuously.

Rewards such as monetary bonuses and job promotions significantly affect knowledge sharing (Wickramasinghe & Widyaratne, 2012). Bartol and Srivastava (2002) considered the rewards system effects on encouraging employees to share knowledge, and they found that the rewards system could be effective at individual or group level. They mentioned personal rewards such as merit pay and team-based rewards such as profit-sharing, gainsharing, and employee stock options that promote KS. Moreover, they played a unique role in indirect rewards, such as fair procedures and distributions, due to their essential impact on developing trust in the organisation. According to Hung et al. (2011), extrinsic motivators such as economic rewards can increase staff's passion for engaging seriously in KS activities. Wang et al. (2014) analysed rewards system impacts on KS, considering personality features, and they found that while being extroverted or introverted does not affect KS, bonuses are excellent motivators for both characters.

Technological drivers

New technologies have significantly impacted human life by facilitating tasks and processes, speeding things up, saving time, and optimising energy consumption. Meanwhile, as a symbol of advanced technology, information technologies also emerged to increase communication, promote relationships, and improve interactions, and they have become a critical leverage for sharing and transferring information, experiences, skills, and knowledge.

Technology is associated with the latest approaches, tools, and techniques in storing, codifying, and converting, transferring, delivering, and distributing, which facilitate KM processes. Rodrigues et al. (2016) defined technology as aware-making and posited that it acts as a facilitator for increasing people's understanding of their awareness and non-awareness, besides their role in promoting KS practices. According to Akhavan and Mahdi Hosseini (2016), technologies in KS increase organisations' knowledge-based capabilities and enhance the KS process among employees. Technologies develop the KS processes by boosting codifying the tacit knowledge (Inkinen et al., 2015) and improving staff learning and experience sharing (Oyefolahan & Dominic, 2013).

Computer network infrastructures and the intranet are the initial technologies that enhance KS practice and facilitate processes in operating platforms where employees perform their functions. Web 2.0, including the internet, freeware, cross-platform, cloud-based instant messaging (IM) service, organisational portals and weblogs, and knowledge sharing systems (KSS), such as databases, are technological constructs that are involved in KS enhancement (Tan & Md. Noor, 2013).

Paroutis and Al Saleh (2009) considered a pivotal role for Web 2.0 in that it supports organisations with new opportunities for KS by providing social networking and blogs. Web 2.0 extended employees' communications domain into online/virtual communities of practice (CoPs) and the intranet, giving them more options for sharing their knowledge. Weblogs are the best platform for communications used for KS, especially for tacit knowledge, which is sharable only through social interactions. Weblogs provide a friendly discussion base for encouraging people to share ideas (Papadopoulos et al., 2013; Yu et al., 2010). Moreover, they are flexible for users to release their knowledge, experiences, and thoughts (Kaiser et al., 2009).

Organisational portals serve employees with forums, chat rooms, and organisations' repositories and databases to share their experiences, information, and skills and raise their innovation and creativity (Saghapour et al., 2018). Furthermore, they are essential for decision-making through sharing, particularly when organisations need experts' immediate and formal collective opinions (Al-Debei et al., 2013). Furthermore, the internal portal increases openness and team spirit in the organisation, enhances interpersonal trust, cooperation, and individual creativity, and it promotes KS (Edwards et al., 2020). Besides advantages, new technology can cause trouble, e.g., breakdowns and errors, impacting the operators' efficiency. Therefore, employees need to communicate with specific field experts for technical advice. Expert profile systems help staff share their equipment usage experiences and skills and consult specialists. In addition, this system provides employees with free and quick access, either online on the organisation's intranet or website, to the in-charge experts and it facilitates knowledge sharing (Aichholzer, 2001).

In a knowledge management system (KMS), databases and repositories are essential for capturing and storing knowledge and facilitating the functions in KS. An organisation's strategy in KS is always to share, store, and share knowledge. Therefore, they encourage and push their employees to exploit knowledge repositories as part of the performance evaluation process (Gündüz, 2022; Liebowitz & Megbolugbe, 2003). According to Ghobadi and Mathiassen (2016), databases and repositories are vital tools for employees to access the knowledge they require timely and quickly. However, they believe that databases and repositories are necessary but not adequate for sharing.

Study One: Delphi for an exploratory analysis

Delphi method

Delphi, also known as the estimate-talk-estimate (ETE), is a structured technique developed as systematic, interactive forecasting to assist scholars in predicting challenges and dynamics associated with technology applications (Fritschy & Spinler, 2019; Heiko, 2012; Kattirtzi & Winskel, 2020; Onjewu et al., 2021; Rezaei et al., 2021c). Several unique features have led to the introduction of Delphi as a valuable and helpful technique for researchers, convincing them to apply it in their studies.

First, Delphi provides participants (experts) with opportunities to predict and judge. Experts are permitted to use their significant professional expertise and

experiences to estimate the future in terms of what is more likely to happen and what is more effective for a process or subject (Rezaei et al., 2021b). Delphi is based on exchanging ideas; thus, experts are anonymously informed of others' viewpoints. Accordingly, anonymity is the second particular Delphi feature that reduces the risk of conformity biases and socio-psychological pressures, and it permits experts to modify evaluations in the subsequent phases of Delphi without fear of losing reputation and credibility (Nielsen & Thangadurai, 2007; Steurer, 2011). Third, by this method, experts can modify their decisions in a series of consequent rounds without losing their reputation and credibility (Rezaei et al., 2022a; Steurer, 2011). Experts' independent thought is the fourth unique feature of Delphi, because this method does not demand proximity or a face-to-face meeting. Fifth, this method helps scholars save money and time and enables group communication free from geographical constraints (Donohoe & Needham, 2009).

The panel of experts

The Delphi participants, experts in the study scope, are known as panellists. The selection strategy, the panel size, and continuous engagement throughout the participation process are critical in composing the panel group (Rikkonen et al., 2019; Rezaei et al., 2021d). We applied the snowball sampling method to identify and choose the members. Accordingly, we prepared and invited a shortlist of 20 BG founders/owners and the CEO. We also asked them to introduce three or more of the same-rank in other BGs, regardless of their acceptance or refusal of the invitation; consequently, we have obtained a complete list of experts. Accordingly, we composed our final 17 panellists from 12 people on the initial list and five out of 16 introduced in the second invitation.

The procedure

The Delphi procedure started in a pre-round for setting the questionnaire. First, we recognised 16 items in three dimensions, individual, technological, and organisational, by reviewing the prior studies on KS drivers. Then, on a 5-point Likert scale, participants were asked to rate the importance of the factors in driving KS. For instance, we asked: "To what extent do you agree that gender is an essential driver for KS?".

For all rounds, after receiving the results, we determined the mean score and standard deviation of items, and Kendall's coefficient of concordance (i.e., Kendall's W), which is the scale for continuing the processes in which the Delphi will continue until the panellists reach a consensus. Kendall's W is a nonparametric test ranging values between 0 and 1, which reflects "no agreement" and "complete agreement", respectively (De Jesus et al., 2019). As the value "1" is almost unattainable, according to empirical experiences, the minimum value of 0.5 for Kendall's W is considered a consensus (Okoli & Pawlowski, 2004; Rezaei, 2018a). The consensus is usually reachable after three or four phases based on empirical evidence (Hsu & Sandford, 2017) (Fig. 1).

Consensus

Consensus is a measure that reflects the convening evidence of a joint agreement in Delphi rounds. We obtained this evidence after analysing the third-round results. First, according to Table 1, the trends of SD values decreased considerably, indicating panellists gradually acquired a reliable convergence in recognising the most critical drivers. Second, Kendall's W values increased significantly during the rounds (see Fig. 2 and Fig. 3). Therefore, at the end of the third round, when 12 indicators had a minimum mean value of 3.5 and Kendall's W value touched 0.544 (see Table 2), we could conclude a 54% consensus on these 12 critical KS factors among experts had been obtained (De Jesus et al., 2019). Table 2 summarises the Delphi results, indicators development and Kendall's W.

Second study: survey data for CFA

Choosing the industry

Although there is little known about the characteristics and performance of Australian new-born firms, among the 3,000 units that are founded annually, close to five per cent, including BGs, are engaged in export activities (Tuhin & Swanepoel, 2017). However, BGs' share of total exporters had a declining trend in 2006, but as the world economy recovered in 2012, BGFs' share increased again and has now retaken their rank among exporters (Bruno & Swanepoel, 2020). Hence, compared to New Zealand, with similar enterprise birth rates and degree of trade openness, Australia has a higher share of growing BGFs. Small enterprises compose the majority of BGFs in Australia, with close to two-thirds of them being micro-sized firms (less than five employees) and less than five years old. They are primarily involved in wholesale trade; professional, scientific, and technical services; retail trade; and manufacturing industries. Compared to other

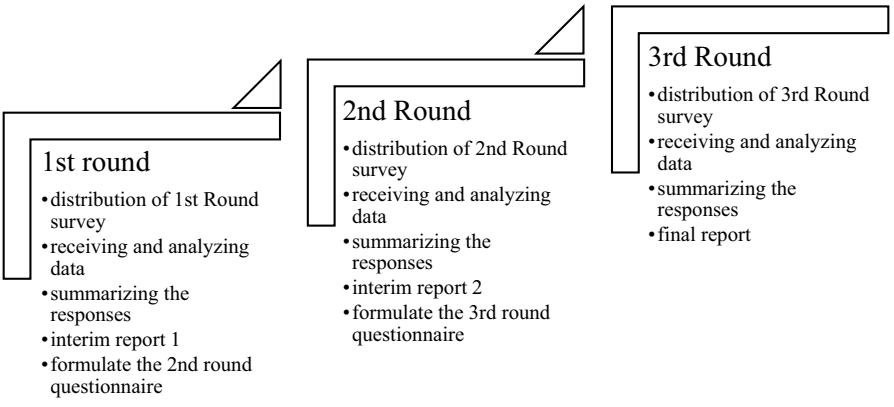

Fig. 1 The Delphi rounds

Table 1 Descriptive statistics of Delphi rounds

Key indicators		1st Round		2nd Round		3rd round	
		Mean	SD	Mean	SD	Mean	SD
Individual dimensions	**Personal Intention**	3.7059	.77174	3.7647	.75245	3.8235	.63593
	Reciprocity	3.8235	.72761	3.8824	.69663	3.8824	.60025
	Trust	3.8824	.69663	3.9412	.55572	4.0000	.50000
	Motivation	3.7059	.68599	3.8235	.63593	3.9412	.55572
	Race and religious beliefs	**3.1765**	**.39295**	**3.1176**	**.48507**	**2.9412**	**.24254**
	Gender	3.5294	.51450	**3.2353**	**.43724**	**3.2353**	**.43724**
Technological dimension	**Knowledge Sharing Systems**	4.0000	.61237	4.1176	.60025	4.2941	.46967
	Web 1.0	3.8235	.72761	3.5882	.61835	**3.4118**	**.50730**
	Web 2.0	4.1176	.69663	4.4118	.61835	4.5882	.50730
	IT Infrastructures	4.1765	.72761	4.2353	.56230	4.3529	.49259
Organisational dimensions	**Management Supports**	4.4118	.61835	4.4706	.51450	4.5882	.50730
	Monetary Rewards	3.5882	.71229	4.1176	.69663	4.2941	.46967
	Non-Monetary Rewards	3.5294	.71743	4.0588	.65865	4.2353	.56230
	Organisational Culture	4.0000	.50000	4.1765	.52859	4.7059	.46967
	Leader behaviour	3.6471	.78591	**3.4118**	**.50730**	**3.2941**	**.46967**
	Organisational Structure	3.9412	.42875	4.1765	.52859	4.1765	.39295

exporting firms, Australian BGs are more persistent in export markets; their average and median export intensities are higher, but they do not have different rates of R&D activity and foreign ownership compared to overall exporters.

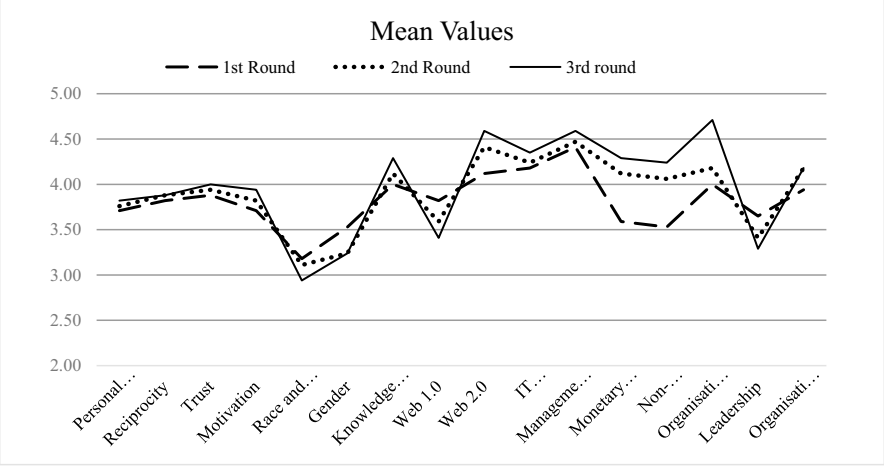

Fig. 2 Mean Values Trend

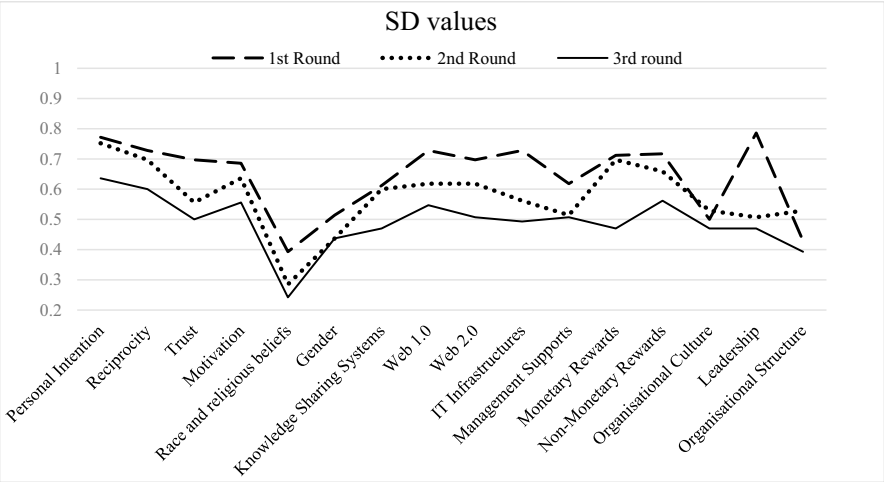

Fig. 3 SD Values Trend

Compared to non-exporting firms of the same size and age, BGFs have lower turnover and productivity growth, and they assign more funds for R&D programmes and capital expenditures (Andersson & Evangelista, 2006; Bruno & Swanepoel, 2020; Onjewu et al., 2022; Rezaei, 2018b).

Accordingly, we picked our sample among Australian-born global firms categorised into five main industry groups: wholesale trade; professional, scientific, and technical services (PST); retail trade; and manufacturing. Next, we sent 743 questionnaires to their central decision-makers (e.g., managers in production, sales, and marketing). After assessing the responses of 309 received questionnaires, 202 were acceptable for the following analyses (reflecting a response rate of over 27 per cent – see Table 3).

Common method bias

We used Harman's Single-Factor Test in SPSS to evaluate the common method bias (CMB), which is a fundamental bias (variances). When a study is conducted using

Table 2 Summary of the Delphi rounds

Delphi rounds	Summary of activities and results					Chi-Square	Kendall W	Need to next round?
	Invited/ Participated panellists	N	Indicators (mean > 3.5)	df	Sig			
First round	17/17	16	15	15	0.000	46.928	.184	Yes
Second round	17/17	16	13	15	0.000	81.255	.319	Yes
Third round	**17/17**	**16**	**12**	**15**	**0.000**	**138.604**	**.544**	**No**

Table 3 Descriptive statistics of the second survey community

	Education level			Work experience (year)				Gender		
	Bachelor's or below	Master's	PhD	< 1	1–3	3–5	5 <	M	F	N.A
Sales manager	35	10	5	12	12	14	12	20	15	15
Marketing manager	31	9	4	11	16	11	7	21	16	8
Production manager	39	11	3	11	17	10	14	23	16	13
Other	42	10	3	16	15	14	10	22	11	22
Total	**147**	**40**	**15**	**51**	**59**	**49**	**43**	**84**	**57**	**61**
	202			**202**				**202**		

questionnaires to measure participants' beliefs, these variances negatively impact the relationships in structures and lead to results being contaminated. According to Harman's single-factor test, all items are loaded into one common factor. Accordingly, there is CMB if the single factor explains more than 50% of the variance of all variables (Kock et al., 2021). Our result was about 37%, which indicates CMB was not a problem in this research.

Multivariate normality and multicollinearity

As a fundamental pre-step, the researcher should ensure the data normality. To this end, we applied the skewness and kurtosis test, most suited for the Likert scale (Keller, 2015). Accordingly, values between -2 and + 2 indicate data normality (Garson, 2012). Therefore, according to Appendix 1, our data has acceptable normality. Also, it is necessary to acquire confident evidence on multicollinearity, which means the independence of descriptive variables; therefore, we analysed the variance inflation factors (VIF) ($VIF = (1\text{-}R^2)^{-1}$). As R^2 values are less than 0.8, VIF values will not be more than 5 (acceptable range (Field, 2013)); consequently, multicollinearity was not a concern to the study.

Assessing reliability and validity

The reliability test (internal reliability and composite reliability (CR) and Average Variance Extracted (AVE)) ensures researchers that the questionnaire consistently reflects the construct that it is measuring (Field, 2013). Accordingly, to measure the internal reliability, we applied Cronbach's Alpha, which is confirmed by values more than 0.7. In addition, we analysed CR, which refers to assessing the internal consistency of a latent construct, and AVE, which refers to the average percentage of variation explained by measuring the items for a latent construct. The acceptable values range exceeds 0.5 for CR and AVE (Field, 2013) (Table 4).

We applied the validity analysis, consisting of convergent validity, discriminant validity and content validity, to measure the internal correlation and item alignment in a category to determine how much a scale or set of measures accurately represents

the concept of interest. Therefore, we performed confirmatory factor analysis and used the outputs to examine the validity of the dimensions. Convergent validity is assessed by computing the CR and AVE values in which CR should be greater than AVE, and both should be more than 0.7 and 0.5, respectively (see Table 5).

Discriminant validity indicates the uniqueness of constructed measures for analysing and assures researchers that questions of a factor are different to other factors. We assessed discriminant validity using the AVE and factor correlation. Accordingly, meeting two criteria is necessary; first, the AVE value has to be greater than 0.50 (to ensure the adequacy of the construct validity) (Lomax & Schumacker, 2012), and second, AVE should exceed the squared factor correlations (R^2) (Henseler et al., 2016).

Outputs (Table 6) indicate the discriminant validity is established in our study.

Model fit assessment

We applied structural equation modelling (SEM) to assess the model's goodness of fit. The results indicate the model fit is very satisfactory (See Table 7).

Discussion and implications

According to the results, managers engaged in BGFs reflected their preference for the ODs more than the other two dimensions, with four of the first five factors being ODs. Accordingly, financial, and non-financial rewards, organisation structure, and organisational culture were the most critical factors driving the KS processes. The reward drivers include financial incentives such as salary and bonuses and non-financial rewards such as acknowledgement and recognition. The OD reflects the governing system in an organisation. The BGF managers believe that, through a less centralised managerial system, members' communication will increase in quality and quantity, and knowledge sharing will be facilitated. Our findings also reflected the importance of cultural issues in the organisation. If organisations grow a culture full of social norms, such as teamwork, supportive culture, and learning culture, they can have an organisational environment that will be likely to grow employee participation and communication for KS. On the other hand, managers showed great attention to some individual drivers, such as trust and intention. TDs, compared to IDs and ODs, received less attention from managers. Among 12 factors, TDs got the last two positions.

The findings of this research add to the literature from different perspectives. From the theoretical point of view, the novel result of this study explicitly explores knowledge sharing from drivers at the largely ignored born-global firms. Indeed, our findings contribute to KM and BGs studies by conceptualising KS drivers in the literature, which are essential for small and medium-sized BGs. Extant research (e.g., Hughes et al., 2019) has explored knowledge management in general, whereas our context-specific synthesis validates drivers and indicators of 12 knowledge-sharing drivers for Australian born-global firms. This is particularly important since it helps our understanding of the role of knowledge by providing insights into the underlying motives and drivers of KS in three categories of individual, technological and

Table 4 Construct reliability

Indicators	Standardised Regression Weight (SRW)	Cronbach's Alpha	Composite Reliability (CR)	Average Values Extracted (AVE)	Is it established?
ID			0.880	0.648	yes
Trust	0.759	0.735			
Reciprocity	0.841	0.807			
Motivation	0.825	0.787			
Intention	0.792	0.778			
OD			0.922	0.703	yes
Organisational Culture (OC)	0.843	0.821			
Organisational Structure (OS)	0.815	0.794			
Management support	0.824	0.791			
Financial Rewards	0.864	0.843			
Non-Financial Rewards	0.846	0.812			
TD			0.831	0.621	yes
IT infrastructures	0.753	0.739			
Web 2.0	0.812	0.768			
Knowledge Management System (KMS)	0.797	0.781			

Table 5 Convergent validity

	Average variance extracted (AVE)	Composite reliability (CR > 0.7)	Is it established? (AVE > 0.5), (CR > 0.7)
Individual drivers	0.514	0.880	yes
Organisational drivers	0.562	0.922	yes
Technological drivers	0.502	0.831	yes

Table 6 Discriminant validity

Discriminant validity	Factor correlation (R)	R^2	AVE1 and AVE2	Is it established? ($AVE_i > R^2$)
ID < – > OD	0.798	0.637	0.648,0.703	yes
ID < – > TD	0.787	0.619	0.648,0.621	yes
OD < – > TD	0.782	0.612	0.703,0.621	yes

Table 7 Fitness indices

Fit indices	Reference value	Model value	Comments
CMIN/df	$\chi 2$ /df < 3	1.511	Achieved
RMSEA	0.03 < RMSEA < 0.08	0.050	Achieved
GFI	More than 0.90	0.94	Achieved
TLI	More than 0.90	0.90*	Achieved
NFI	More than 0.90	0.92	Achieved
CFI	More than 0.90	0.91	Achieved

* *Almost accepted*

organisational dimensions. We highlight that effective knowledge sharing does not take place in isolation. Rather, it requires international small firms (e.g., BGFs) to not only focus on individual aspects such as developing trust among employees but also increasing their organisational and technological readiness. On the other hand, an outstanding component of this study is that we employed a wide range of decision-makers, from founders and owners to production, sales, and marketing managers. This participation of various experts increases the validity of the conceptual model and the generalisability of the findings to a wider sample that includes BGFs in other Asia Pacific regions. Furthermore, by bridging irregular experiences to the planned pattern, our findings boost the domain for KS and BG studies.

By providing some practical implications, managers and central decision-makers in the private and public sectors can apply these findings to enhance their knowledge of BGs and KS through policymaking and planning. As such, the practical implications of this study have re-emphasised the importance of the KS as a forerunner-developer that

enhances the business. Thus, stakeholders interested in practical evidence will be more attracted to re-evaluating the KS system in their organisation. Moreover, by sorting and ranking the drivers, this study optimises promoting plans for KS; therefore, organisations meet the highest benefits versus the minimum cost when they know which drivers are more important and influential. On the other hand, a developed plan for recognising the KS drivers will help managers in BGFs trace and find barriers to sharing the employees' skills, experiences, and information. Furthermore, our findings could be also helpful for trade and export policymakers, such as macro-economy decision-makers, to make essential decisions on essential international business policies. Finally, the outputs light the roadmap for evaluating BGs' business performance so that stakeholders are widely informed on weaknesses and obstacles in sharing the required knowledge and are impressed to facilitate business processes by saving time and capital.

Conclusion

In this paper, we attempted to develop and validate drivers and indicators that impact KS and could help BGF managers to monitor sharing practices and their consequences. A well-developed study with an organised, validated approach to recognising the KS drivers has a significant role in assessing the progress and success of an international business. In principle, using exploratory and confirmatory frameworks with broad-based participation of experts and stakeholders in exploring and developing the drivers and applying transparent and systematic approaches during the phases has provided the research with acceptable confidence (Rezaei et al., 2022a). This study went some distance to fill the lack of enough knowledge on KS drivers in a BGF environment. Following a participatory and systematic approach, this research revealed how beneficial indicators could be developed and validated.

Although internationalisation and international entrepreneurship is the leading topic in business studies, the literature dealing with KS assessment in BGFs did not yet reach its maturity level. It is hardly possible to recognise whether an indicator is essential for KS processes in BGFs. Moreover, even if an indicator has proved its effectiveness on KS in a particular international business firm, its vitality is still doubted in other firms such as BGs. On the flip side, KS drivers' development is challenging to measure without breaking it down into small items represented by indicators. Therefore, because there is no "one-size-fits-all" approach, researchers are imperceptibly encouraged to assess recognising the KS stimulants in a comprehensive methodology (Razmerita et al., 2016).

Keeping this in mind, we prepared and obtained a comprehensive list of indicators from the literature review, which consisted of identified indicators in various scopes of firms. This was followed by a three-round Delphi method by assessing the initial list and reducing the KS factors from 16 to 12 in three main driver categories. Finally, the validation phase ended with the retention of 36 items for 12 elements.

Our findings illustrate the drivers in the OD group, compared to ID and TD, have much more correlations. For example, financial rewards and OS contain the highest weights, which reveals that financial motivations are still influential drivers regardless

of other incentives. This finding has been supported by prior studies conducted on the roles of rewards systems in KS in different kinds of firms (e.g., Amayah, 2013; Asrar-ul-Haq & Anwar, 2016; Henttonen et al., 2016; Muhammed & Zaim, 2020; Rezaei et al., 2022b). Meanwhile, management support was imagined to be much more effective in the OD group, but results showed lower values. This can be related to the firm's size, as BGs are mostly small-sized (and to some extent medium); therefore, hierarchy does not matter as much as managerial support as an effective driver.

IDs also reveal significant results. In BGFs, individuals are more interested in sharing their knowledge with those who are more reliable and trustworthy. They do the KS practices for personal intentions and as a reciprocal function. Our outputs support period studies that analysed the individual incentives for KS in organisations (Noor et al., 2014; Rezaei et al., 2022b).

As Nonaka and Toyama (2015) argued, new technologies provide unique facilities for transferring some kinds of particular knowledge that is not sharable in other methods. Accordingly, our findings also showed the pivotal role of TDs in KS. We considered these drivers in three sections, and a slight difference is seen in their effectiveness on KS. Web 2.0 provides vital capacities for sharing knowledge with unique features. Moreover, it positively impacts enhancing the communication functions in two dimensions of quantity and quality of transferring, and it solves the problems realised from distance and time-zone differences. Finally, following WEB 2.0, IT infrastructures and KMS help individuals share their skills, experiences, and ideas. Our results cover the findings of the prior attempts to analyse Web 2.0 and IT infrastructure and KMS (e.g., Aljuwaiber, 2016; Oyefolahan & Dominic, 2013).

Appendix

Table 8 Mean, SD, skewness, kurtosis, factor loading, and Cronbach alpha

Factors/ items	Mean	SD	Skewness	Kurtosis	Factor Loading	Cronbach's Alpha
Individual Drivers (ID)						
Trust						0.736
Tr1:	3.7822	0.74785	0.379	-1.128	0.671	
Tr2:	3.8614	0.76659	0.242	-1.259	0.624	
Reciprocity						0.694
Re1:	3.505	0.72102	1.068	-0.276	0.624	
Re2:	3.599	0.78074	0.838	-0.852	0.641	
Motivation						0.689
Mo1	3.6535	0.79720	0.587	-0.975	0.635	
Mo2:	3.5891	0.75606	0.566	-0.617	0.671	
Mo3:	3.5941	0.80023	0.807	-0.86	0.612	

Table 8 (continued)

Factors/ items	Mean	SD	Skewness	Kurtosis	Factor Loading	Cronbach's Alpha
Intention						0.734
In1:	3.4752	0.70667	0.900	-0.095	0.771	
In2:	3.6832	0.79088	0.629	-1.123	0.694	
In3:	3.6386	0.76821	0.722	-0.944	0.724	
Organisational Drivers (OD)						
Organisational Culture (OC)						0.772
OC1:	3.7624	0.81830	0.465	-1.354	0.789	
OC2:	3.896	0.69403	0.142	-0.911	0.745	
OC3:	3.6683	0.76222	0.642	-1.002	0.802	
Organisational Structure (OS)						0.802
OS1:	3.6733	0.76761	0.635	-1.030	0.776	
OS2:	3.4653	0.63972	1.052	0.004	0.812	
OS3:	3.5792	0.65119	0.685	-0.551	0.821	
OS4:	3.6485	0.62312	0.417	-0.656	0.784	
Management support						0.651
MS1:	3.5792	0.64350	0.549	-0.497	0.697	
MS2:	3.5297	0.58302	0.264	-0.560	0.678	
MS3:	3.5891	0.61042	-0.280	-0.145	0.802	
MS4:	3.3812	0.59704	-0.097	-0.441	0.782	
Financial Rewards						0.824
FR1:	3.495	0.68566	0.018	-0.201	0.808	
FR2:	3.6782	0.73330	-0.101	-0.254	0.871	
FR3:	3.7772	0.77580	-0.494	0.090	0.798	
Financial Rewards						0.782
NFR1:	3.7624	0.79986	0.279	-1.057	0.765	
NFR2:	3.7327	0.57978	-0.979	1.283	0.795	
NFR3:	3.995	0.70885	0.007	-0.995	0.803	
Technological Drivers (TD)						
IT infrastructures						0.634
IT1:	3.7921	0.49509	-0.391	0.110	0.597	
IT2:	3.9158	0.54439	-0.057	0.330	0.589	
Web 2.0						0.723
WB1:	3.8119	0.55022	-0.070	-0.076	0.752	
WB2:	3.703	0.59089	-0.102	-0.172	0.698	
WB3:	3.5941	0.62578	0.315	-0.450	0.771	
WB4:	3.3812	0.59704	0.753	0.249	0.758	
Knowledge Management System (KMS)						0.645
KMS1:	3.5396	0.62368	0.594	-0.425	0.562	
KMS2:	3.6089	0.71273	0.734	-0.715	0.573	
KMS3:	3.5396	0.6316	0.747	-0.438	0.584	

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