Abstract

Purpose- The purpose of this paper is to investigate factors influencing knowledge sharing on enterprise social network use behaviour among academic staff in universities, utilising the unified theory of acceptance and use of technology (UTAUT) as the underlying research framework.

Design/methodology/approach – A conceptual framework was created by extending the unified theory of acceptance and use of technology (UTAUT) by incorporating three additional factors namely, feature value (FV), relationship expectancy (RE) and professional benefits (PB). A quantitative approach based on the survey was used to collect data from 254 academic staff. Data were analysed using structural equation modelling.

Findings – The result indicated significant differences around factors influencing both consumptive and contributive usage patterns within ESN's. These factors suggest more contributive than consumptive use.

Research limitations/implications- Future research should consider a longitudinal study focusing on the change in enterprise social network use behaviour among academic staff and the fundamental aspects influencing this change.

Originality- This study extends the UTAUT model by incorporating three additional factors: feature value, relationship expectancy and professional benefits, to study ESN use behaviour in a higher education context. This study has significantly modified UTAUT to include the dynamic nature of enterprise social network usage.

Keywords: Enterprise social network, Academic staff, knowledge sharing, Unified Theory of acceptance and use of technology (UTAUT), Consumptive use, Contributive use.

Paper type Research paper

1. Introduction

The value of knowledge as a tactical resource to any organisation is progressively accepted with a rising awareness that nations and organisations have become more information and knowledge-intensive (Corcoran and Duane, 2018). Higher education institutions, such as public universities, have always considered knowledge exchange crucial to research excellence (Corcoran and Duane, 2018; Grant, 2016; Tohidinia and Mosakhani, 2010; Cranfield & Taylor, 2008). Therefore, finding the right methods for sharing knowledge across academic staff has been an important issue for both universities and knowledge management research (Kazemian and Grant, 2020; Corcoran and Duane, 2018). Numerous higher learning institutions have been receiving grants to implement knowledge management practices (Sohail and Daud, 2009, EPSRC, ESRC). The management of managerial knowledge and the support of academic staff knowledge sharing is mainly forgotten in higher education organisations with the minimal amount of knowledge management execution and knowledge sharing manifest in these associations (Fullwood et al., 2013).

Moreover, valuable unstructured knowledge from experiences, insights, and academic staff ideas is often not clearly part of the knowledge sharing process (Cleveland, 2016). With the growth of social media tools and the success of public social networking platforms such as

Linked In, Facebook and Twitter, much research has recommended new opportunities that these technologies may offer for allowing both formal and informal knowledge exchanging (Chin et al., 2015, 2019; Grant, 2016, Grant and Preston 2019; Panahi et al., 2013). There is a large study focusing on the acceptance and consequent usage of this public SNS both by individuals and the organisations in Information System (IS) literature (Al-Busaidi and Olfman, 2017; Boyd and Ellison, 2007; Kane et al., 2014; Moqbel et al., 2013; Wehner et al., 2017; Wilson et al., 2012).

Therefore, recent evidence shows that many universities have recently embraced enterprise social networking tools such as Microsoft Teams, Yammer, Jive or other tools, for enhanced communication, relationship, partnership, and improved knowledge distribution and sharing (Ortbach and Recke, 2014). However, this social network term's expected benefits have not been completely understood due to the comparatively low usage of such networks between faculties and academic staff (Kazemian & Grant, 2020). Mäntymäki and Riemer (2016) explained that ESN is "web-based platforms that allow individuals to (1) communicate messages with their colleagues or circulate messages to everyone in the workplace; (2) clearly indicate or tacitly reveal specific collaborators as communication partners; (3) post, edit, and sort text and files linked to themselves or others; 4) view the messages, connections, writing, and data communicated, posted, edited and sorted by anyone else in their organisation at any time" (p. 1042). Academic staff may adopt enterprise social network for feeding (consuming) information and knowledge. Consumptive enterprise social networks may ask questions about work-related problems, read the news feed, search, and download files. Other academic staff may use the platform for donating information and knowledge (contributing), such as responding to other academic staff inquiries, posting a post, and uploading a file (Chin et al., 2019; Mäntymäki and Riemer 2016; Kügler et al., 2015).

UTAUT has been broadly used in technology adoption and dissemination research as a theoretical lens by scientists conducting empirical experiments of user intention and behaviour (Williams et al., 2015). However, there is a clear sign of disparities in results when UTAUT has been used in different research settings to study behaviour intention and technology adoption. Furthermore, the studies by Wang et al. (2014) and Chin et al. (2019) modified the original UTAUT to discover the changes in the factors affecting the behavioural intentions among social and silent group users. They found that other factors, such as *Content Value and Relationship Expectancy,* significantly influence both types of use patterns toward social media tools. Consequently, this research paper aims to achieve the following objectives: (1) Examine the impact of the extended UTAUT factors on both consumptive and contributive enterprise social network usage (2) Develop a cohesive enterprise social network use model by modifying the Unified Theory of Acceptance and Use of Technology (UTAUT).

The examination of the topic, therefore, fills several topical and methodological research gaps. Two primary gaps inspired the present study in the existing literature on enterprise social network use in higher education. First, while enterprise social network seems to gain popularity between academic staff use, many scholars have noticed an increasing need for research that speaks more fully the role and benefits of enterprise social networking platforms in the context of higher education (Ortbach & Recke, 2014; Kazemian and Grant, 2020; Corcoran and Duane, 2018). Moreover, there is a paucity of research on understanding what are the predictors for

both knowledge seeking and knowledge providing of enterprise social network use in higher education (Kazemian, 2018; Kazemian and Grant, 2020; Cleveland, 2016; Oyeronke et al., 2015; Ortbach and Recker, 2014; Corcoran and Duane, 2018). Second, despite the fame of the Unified Theory of Acceptance and Use of Technology (UTAUT) as a framework of technology implementation in the organisational context, only a minor study employed it empirically (Gruzd et al., 2012), therefore the need for further replication. Furthermore, other additional drivers such as relationship expectancy (Chin et al., 2019), feature value (Cleveland, 2016) are required to assess users' technology use behaviours (Chin et al., 2019; Cleveland, 2016) since earlier studies (Gruzd et al. 2012; Kazemian and Grant, 2020) reveals these platforms enables staff to build a relationship and person perception with other networks.

This study should be of interest to both academics and non-academic settings. This study contributes to the literature in three ways: we contribute to the information system (IS) literature in technology acceptance within higher education; we extended the UTAUT to include the effective environment of enterprise social network usage. Our conceptual model highlights factors affecting consumptive and contributive behaviour in using ESN and the relative impact of these predictors. The results may also be utilised to help administrators implement successful strategies to boost users' engagement in enterprise social network behaviours.

The rest of this paper is organised as follows: Section two provides a review of the extant literature on different information technology and information systems theories to understand individual acceptance and use of information systems (theoretical background). A research model is built, and the related hypothesised relationships are assessed by employing a structural equation modelling method. Consequently, findings, implication, future work, and limitation for academic executives are discussed.

Figure 1 Extended UTAUT with feature value, relationship expectancy and professional benefits (Research Model.JPG)

2. Literature review

Many scholars have employed UTAUT to understand the behavioural purposes of public social networking sites use between academic researchers, students, and customers (Kaba and Toure, 2014; Salahshour Rad et al., 2019; Celik, 2016) and including web 2.0 application (enterprise social networks and blogs) between workforces (Wang et al., 2014). There is a clear sign of disparities in results when UTAUT has been used in different research settings to study behaviour intention and technology adoption. Chin et al. (2019) suggest applying an extended UTAUT model to explore factors influencing consumptive and contributive use in professional service firms. The results revealed that aside from performance expectancy and effort expectancy are the main drivers of members' technology use behaviours, other additional drivers (such as content value and relationship expectancy) also come into play when enterprise social networks are used. Furthermore, Cleveland (2016) explored seven crucial social network features and derives suggestions that explain how social networking can foster knowledge formation among workers. His study made several practical contributions to knowledge. He

proposed a model on social networking specific features, which may raise the staff's consumptive and contributive use. Although Cleveland (2016) did not develop an instrument (i.e., survey) to measure the study's factors, he left it incomplete. On the other side, he stated that new social networking platforms (i.e., Yammer, Slack and Microsoft Teams) with alternative characteristics might impact community knowledge formation practices differently (Cleveland, 2016).

Over the last decades, scholars have proposed and implemented various information technology and information systems theories to understand individual acceptance and use of information systems. Dwivedi et al. (2019) described these theories as consisting of the Theory of Reasoned Action (TRA), the Technology Acceptance Model (TAM), the Theory of Planned Behaviour (TPB), the Motivational Model, a combination of TPB/TAM, Innovation Diffusion Theory (IDT), and Social Cognitive Theory (SCT) and Model of Personal Computer Utilization (Ajzen 1991; Davis et al. 1989; Fishbein and Ajzen 1975; Thompson et al. 1991). The Unified Theory of Acceptance and Use of Technology (UTAUT) was built across the assessment and combination of these major theories and models (Williams et al., 2015). Venkatesh et al. (2003) suggested the Unified Theory of Acceptance and Use of Technology (UTAUT), which has subsequently been applied widely by researchers in their hunt to explain IS/IT acceptance and use, can be a helpful organisational tool in identifying the drivers of new technology use in a company to create efficient involvements (Wang et al., 2014). Moreover, the results from the original study by Venkatesh et al. (2003) indicates that UTAUT justifies 69 per cent of variance compared to the eight individual models explaining between 17 and 53 per cent of the variance (Williams et al., 2015). The ambition to explain and confirm the UTAUT was created on the argument that various of the constructs of remaining theories are similar; it was rational to plan and incorporate them to establish a unified theoretical core and therefore, further studies would not require to search, collect, and combine constructs from several different models (Williams et al., 2011). The *Unified Theory of Acceptance and use of technology* theory comprises of four main paradigms: performance expectancy, effort expectancy, social influence, and facilitating conditions which regularly cooperate with other related influences such as gender, age, experience, and voluntariness of use to impact usage intention in implementing an information system (Dwivedi et al., 2019). The theory constructs are explicit factors of IS/IT behavioural intention and explain IT users (Williams et al., 2011).

3. Conceptual model and hypotheses design

In doing so, this paper suggests three new constructs, namely relationship expectancy, feature value and professional benefits, are integrated into UTAUT to recognise the motivations behind consumptive and contributive use of enterprise social networks in academic settings. Therefore, applying UTAUT is relevant to exploring enterprise social network use due to its high explanatory power and robustness in predicting users' intention to use technology in the higher education community and its underutilisation among academic staff.

3.1 Distinguishing Consumptive and Contributive Use of Enterprise Social Network

In our research, we use Kügler et al. (2015) definition of consumptive use as "the extent to which employees use an enterprise social network for acquiring knowledge from the platform (e.g., by reading a wiki entry or accessing a document)". Contributive use signifies "the extent to which employees use an enterprise social network for contributing knowledge to the platform (e.g., by posting a blog entry or uploading a document)." Cleveland (2016) explained that the knowledge-seeking process is defined as "the active pursuit of information in order to fulfil precise knowledge needs". In our study, exchanges between seekers and contributors result in a dynamic knowledge sharing procedure that involves the information obtained, association, allocation, and recycling of community practical experience.

3.2 Performance Expectancy

According to Venkatesh et al. (2003), performance expectancy is defined as "the degree to which an individual believes that using the system will help him or her attain gains in job performance". This study refers to the degree to which academics believe that using an enterprise social network would help them access research opportunities and research accomplishments such as funding and productivity in their research. Individuals assess their technology-facilitated job performances in terms of the related benefits (i.e. acceleration of efficiency, success, and productivity in research performance) and costs (i.e. mental, behavioural, time investments received for particular research assignments) (Salahshour Rad et al., 2019). Therefore, if the benefits of effort are high and the cost is low, the useful value of the technology is superior, and the intention to use such technology is positive for both consumptive and contributive use. A recent study by Gruzd et al. (2020) found the top two benefits, including forming new connections and strengthening existing relationships amongst research staff by using social media tools as a part of their work routine. An empirical investigation by Kim et al. (2006) revealed that performance expectancy was shown to be positively significant to IT utilisation. Performance expectancy was measured by five items, including the time needed for completing tasks, the quality of output, the effectiveness of performing job-related duties, the quantity of the production (Kim et al., 2010). The study by Sung et al. (2015) tested self-efficacy, social influence, and effort expectancy are meaningful antecedents of performance expectancy. However, performance expectancy played an insignificant factor to predict the behavioural and adoption intensions of social media in small business use (Mandal and McQueen, 2012). Given the weight of evidence showing the prominent role performance expectancy can play in influencing the individual's behaviour and intention to use social media tools, we posit that:

H1a Performance expectancy has a positive impact on consumptive enterprise social network use.

H1b Performance expectancy has a positive impact on contributive enterprise social network use.

3.3 Effort Expectancy

Patil et al. (2020) defined effort expectancy as "the degree of ease associated with the use of the system". In this study, performance expectancy denotes the ease with which academics use enterprise social network in their work practices. Specifically, this includes the ease of use, clearness, and familiarity with enterprise social network platforms. Since most workers have used publicly available social media (e.g., Facebook, Twitter and Linked In), this factor has been debated to be less critical as individuals get to know the technology (Bhattacherjee and Barfar, 2011; Mandal and McQueen, 2012; Chin et al., 2019). Perceived ease of use from the Technology Acceptance Model, a concept like effort expectancy in the UTAUT, was the second most common antecedent of behavioural intention but mostly generated non-significant results (Koenig-Lewis et al., 2015; Phonthanukitithaworn et al., 2015). However, the effect of effort expectancy toward using enterprise social networks among academic staff has not established in the literature. Effort expectancy reflects how effortlessly academic staff can manage access and use of enterprise social network without taking up much time. Thus, the lesser effort academic staff put in, such as ease of reading, stating and posting posts, uploading or downloading files from the platform and ease of access, the more both consumptive and contributive enterprise social network users will increase. Thus, we propose:

H2a Effort expectancy has a negative impact on consumptive enterprise social network use.

H2b Effort expectancy has a negative impact on contributive enterprise social network use.

3.4 Social influence

Chin et al. (2015) defined social influence as "the degree to which an individual perceives that important others believe he or she should use the new system". In this study, academic staff perceive that significant persons influence their use of technology, including decision-makers, the Dean, the Head of Department, and colleagues. Existing literature indicates that social influence has mostly been examined from a socio-psychological perspective (Ngai et al., 2015). Grant and Preston (2019) defined it as "its effect on a group or individual attitudes and intentions towards a certain behaviour". This aspect refers to the impact of directly felt expectations from other people (Cheung et al., 2011). Kelman (1985) proposed three hypothetically lying over methods of social influence, including compliance (subjective norms), internalisation (group norms) and identification (social identity), in the framework of group behaviour. The study by Wang and Lin (2011) reveals that compliance to be very significant as users with low use experience will benefit from valuable information for usage decisions from their key reference parties such as friends and the effect of expectations from others. The study by Bagozzi and Dholakia (2002) reveals that the unity of one's goals with those of other group users (internalisation) and a sense of social identity led to community participation. Therefore, compliance is inconsequential since users' involvement is voluntary and consumptive users can remain anonymous, and they do not need to satisfy other expectations. Besides, in an earlier study (Kazemian and Grant, 2020), academic staff use Yammer voluntarily, and those who consume from the platform prefer to be unknown and did not comply with other user's expectations.

Therefore, social behaviour theories are frequently employed to study users' attitudes, intentions, and actions concerning social media adoption or engagement, either as antecedents or moderators to usage and knowledge sharing. Therefore, we postulate that:

H3a Social Influence has a positive impact on the consumptive enterprise social network use.

H3b Social Influence has a positive impact on the contributive enterprise social network use.

3.4 Facilitating conditions

Facilitating conditions is defined by Venkatesh and his colleagues (2003) "the degree to which an individual believes that an organisational and technical infrastructure exists to support the use of the system". This study refers to the academic staff's perception of the resources and support available to achieve a behaviour, comprising technical and structural elements prearranged to abolish barriers to using enterprise social network inside higher education. Gonzalez et al. (2013) proposed three methods: policy-centred, socialisation-centred, and leadership-centred, to solve the inconsistent nature of the organisation. These methods include integrating social networking sites into employee performance intentions, building individual interactions among staff by hosting events and offering a worth suggestion, respectively (Gonzalez et al., 2013). The association between facilitating conditions and social media behavioural intention and use behaviour was supported in a non-professional setting (Workman, 2014) and academia (Gruzd et al., 2012; Adali et al., 2010) and customer behavioural intention towards digital payment systems (Morosan and DeFranco, 2016; Sivathanu, 2019). However, Mandal and McQueen (2012) claimed that facilitating conditions were not significant for small corporate holders. Patil et al. (2020) said that this relationship's significance in the study describes the need for resources, technical, and legal support to customers for the m-payment system's growing intention. Therefore, users utilise (consume and contribute) the platform if universities provide ongoing awareness activities and events on the platform, training, and education for academic staff. Hence, we suggest that:

H4a Facilitating conditions has a positive impact on consumptive enterprise social network use.

H4b Facilitating conditions has a positive impact on contributive enterprise social network use.

3.5 Feature value

Cleveland (2016) explored seven crucial microblogging features and draws upon seven suggestions that facilitate knowledge generation between employees within a shared knowledge domain. The key features include Pervasiveness, Brevity, Knowledge source profile, Subscription, Reposting, directed communication and tagging. However, we argued that Cleveland's (2016) study exploring the seven crucial factors demonstrates how specifically twitter can enable knowledge creation among employees. The feature called "Brevity" is referred to restrain the textual quantity of the user's messages. Twitter platform restricts posts to 140 characters. Cleveland (2016) claimed that this restraint reduced the user's effort and increased the frequency of content posted on Twitter. Although, enterprise social network is

not restricted the textual quantity of user's messages. Therefore, the other feature, including pervasiveness, knowledge source profile, subscription, reposting, and tagging, is critical in assessing the social network usage. Beck et al. (2014) proposed a social status aspect on knowledge sharing. Social status referred "to a person's position of interpersonal influence and elevated standing in a group and accrues for people who possess certain attributes (e.g., competence or knowledge) valued by the members of a collective" (Beck et al., 2014). Social exchange behaviour, such as providing and obtaining help, can give social status because people are expected to be held in higher esteem if they begin to provide greater help than others (Flynn et al. 2006). Beck et al. (2014) measured a knowledge seeker's social status in the network according to the quality of his or her prior contributions (number re-shared messages, and message quality measured by users via "like" and "tagging" features) of on the platform. Beck et al. (2014) found that the higher a knowledge hunter's social status in the network, the greater the knowledge shared in the social network platform. According to Morris e al. (2012), individuals can create a user profile, including a profile picture, a short biography, source location in an enterprise social network platform. While knowledge contributors share messages on a platform, knowledge hunters can put all messages together by scrolling through a timeline and can create a perception of knowledge contributors from a shared information domain by reviewing the source's profile (Cabrera, 2005). Morris et al. (2012) suggest that the perception of a knowledge source is credibility reduced due to non-standard grammar, no profile picture and low followers. The credibility of sources improved once a knowledge provider or writer influenced the number of followers, number of posts, many mentions counts, and relevant skill and standing they exhibited. A Tagging' feature allows users to organise their content by tagging it with specific keywords for easy retrieval by others (Panahi et al., 2016). In an earlier study (Kazemian and Grant, 2020), academic staff share upcoming research events and work programmes daily using a tagging feature that allowed knowledge hunters to find the essential information quicker. Therefore, we suggest that:

H5a Feature value has a positive impact on consumptive enterprise social network.
H5b Feature value has a positive impact on contributive enterprise social network.

3.6 Relationship expectancy

Relationship expectancy is defined as the degree to which an academic staff assume that using an enterprise social network benefit in commencing and retaining relationships with other academic staff inside the university. Ritcher and Riemer (2013) said that an enterprise social network is created to give robust services to enable the growth of network ties inside the enterprise, such as building person perception (Zhao and Rosson, 2009) and forming new professional relationships. In the study by Levin and Cross (2004) connections are the fundamental basis for obtaining knowledge, asking a question, and resolving issues between knowledge seekers and knowledge contributors. Informal interaction may lead to feelings of affection and connectedness among teammates (Nardi, 2005; Zhao and Rosson, 2009). This positive emotional feeling between individuals, therefore, is crucial for future communications and cooperation. Penni (2017) demonstrates that social network use was precious for young adults because of the sociable personalities that allow them to retain relationships with several

people. Briones et al. (2011) emphasised the increasing importance of social media channels and provided insight into building relationships using social media. Kent (2008) supports that blogs produce organisations benefits such as "issue framing, relationship building, fostering trust, and identification" (p. 37) (Levin and Cross, 2004). In our study, we consider Relationship expectancy as a predictor of enterprise social network use. we posit that:

H6a Relationship expectancy has a positive impact on consumptive enterprise social network use.

H6b Relationship expectancy has a positive impact on contributive enterprise social *network use.*

3.7 Professional benefits

Enterprise social network provides variability of opportunities for collaboration such as improving knowledge sharing and experiencing a feeling of connectedness between staff into academic and commercial settings (Turban et al., 2011; Louw and Mtsweni, 2013; Burégio et al., 2015; Kazemian, 2018). Zhao and Rosson (2009) study that microblogging in a commercial setting made a new informal network for communication at work, facilitating professional benefits (developing the common ground, constructing relationships, building person perception) and individuals' advantage. The prior study by Kazemian and grant (2020) focusing on the role and impact of enterprise social networking between academic staff. The study revealed that an enterprise social network platform found its place like (a) an information-sharing channel, (b) a space for sharing the upcoming academic events or gatherings, (c) a place for receiving open calls, fellowships and collaborating with other research staffs (d) a collaborative platform to share information and discuss funding opportunities of current research and innovation program. Therefore, the university employed enterprise social networks to promote increasing quantities of workshops, mentoring programs, and other initiatives designed to promote and enhance academic grantsmanship, universal publications, and events showcasing. On the other hand, the study reveals a significant constraint between knowledge seekers and knowledge providers, making the platform unsustainable. Besides, the focus group with active knowledge providers indicates that the knowledge seekers regularly view the posts and contact knowledge providers via private social media tools (e.g. email, calls, face-to-face meeting and direct messages via Yammer). The literature has emphasised the importance of balanced, reciprocal technology use when the technology involves two-way interaction among users (Chin et al., 2019; Wang et al., 2014). Therefore, it is essential to measure the hidden benefits received by consumptive users. We predict that knowledge-seeking users will get benefits by being updated from the latest academic work programme opportunities, participating in academic workshops, applying, and receiving a research grant. We propose that:

H7a The higher the Consumptive enterprise social network use, the greater professional benefits will receive.

4. Research methodology

The study is investigative in nature. A survey approach was adopted to examine what factors significantly impact consumptive and contributive use behaviour. Moreover, we explore the background of enterprise social network use within organisations and participant's demographics. To resolve any concerns before data collection and define the time needed for survey completion, we validated the questionnaire by employing two phases, specialist assessment and pilot testing. Hair et al. (2013) advised that a panel of experts in the same field need to evaluate the questionnaire's content critically. Furr and Bacharach (2013) suggest that a valid scale must consist of four essential characteristics: content validity, structural validity, relationships with other variables and response process. Content validities refer to "the extent to which a specific set of items reflects a content domain" (Devellis, 2003). In other words, the scale items should be the illustrative sample of the facets of the latent variable (Sigerson and Cheng, 2018). All constructs or factors in this study involved multiple variables, and to validate the content, we ensured it by relying on pre-tested and pilot tested scales.

Thus, we sent the questionnaire draft by three experts in the same field to rectify any concerns. Then, after refining the survey based on the expert's feedback, we conducted a pilot test with 14 participants to ensure the readability of the survey (Weerakkody et al., 2017; Patil et al., 2020). Measures of the constructs were established based on the existing literature, along with the benefit's construct produced by our prior study and adapted to our empirical setting based on the results obtained. Latent constructs were measured through the measurement items by deploying a survey comprising a 5-point Likert scale and mid-point of neutral to collect the data. A 5-point Likert scale is frequently utilised, and reasonably easy to collect the data from participants using a survey (Chyung et al., 2017).

4.1 Data collection and sampling

Non-probabilistic sampling methods, namely purposive and snowballing sampling methods, were selected to collect the answers. The most eligible participants for this study were academic staff, where enterprise social network had been set up, made available to the staff, and employed in achieving their practices (Jasperson et al., 2005). To recruit our participants, we started to post our survey's advertisement in active groups in the current leading enterprise social network platforms (Yammer and Teams) used in the university. We also leveraged the professional public social networking site LinkedIn, and we advertised our survey between academic staff within other UK universities using enterprise social network platforms (e.g., Slack, Chatter, Jive and Microsoft Teams) to take a broad view on our results. A total of 272 responses were collected over three months. 254 were found to be valid respondents comprised of male (155, 61%) and female staff (99, 39%). Academic staff in our sample are between 20 and 34 years old (57 per cent) and have 122 doctoral researchers (48 per cent), followed by lecturers and post-doctoral researchers or fellowships in second place with 12.2% and 11.8%, respectively. The average working experiences in university were less than 5 years, and 37 participants (14.6%) worked at their university for more than 10 years.

Academic staff utilise Microsoft Teams and Yammer as the leading enterprise social network platforms (52.4 and 35.8 per cent, respectively). Since enterprise social network is a new phenomenon (Zhao and Rosson, 2009), the results show that 59.4% of academic staff have

used enterprise social network for less than 1 year, and 24.4% of them used enterprise social network less than 3 years. In general, the academic staff's role includes teaching, researching, consulting, and publishing, and they also play their role as knowledge disseminator within universities (Jolaee et al., 2014). Therefore, they have in-person communication with others, and 39 per cent of academic staff occasionally employed these platforms. However, this survey was launched before the COVID-19 pandemic. During the pandemic, academic staff were required to use these platforms as a daily tool for being able to communicate with their students and colleagues alike. Consequently, more than half of the academic staff in our sample utilise these platforms as a part of their work practices weekly and daily (21.7 per cent and 33 per cent, respectively). The following table indicates the participants' demographic profiles and the experience of enterprise social network use between academic staff.

Table I Demographic profiles of participants

5. Analyses and results

5.1 Assessment of normality

A normality test was employed to select an appropriate estimation method for structural equation modelling (Payal et al.,2019). The method for evaluating the nature of a data distribution comprises two tests: skewness and kurtosis. Skewness is "the degree of asymmetry of distribution: how much it is skewed to the left or right". Kurtosis refers to "the nature of distribution tails, that is, their length and weight" (Cain et al., 2017). Table II gives the descriptive statistics of the 29 measurement items. Based on the results, all skewness and kurtosis values were lower than the cut off value +3 and -3 (West et al., 1995). All kurtosis values were also within the cut-off value of +7 and -7 (West et al., 1995). Mardia's coefficient 114.850 was lower than P*(p+2), where p=29. Therefore, the sample data met the standards for univariate and multivariate normality.

Table II Normality Test Including Skewness and Kurtosis

5.2 Tests of the measurement model

The goodness of fit criteria and one-dimensionality was employed to assess the measurement model and its specification (Byrne, 2010). On the one side, one-dimensionality was evaluated by reliability tests (i.e., composite and Cronbach alpha reliabilities) and factor loadings for each component alone. But on the other side, a range of goodness-of-fit criteria has been selected in this research. This research focuses on three types of goodness-of-fit criteria: absolute, incremental and parsimony fit indicator (Byrne, 2010). Absolute fit indices are utilised "to measure the overall goodness-of-fit for both the structural and measurement models collectively" (Hair et al., 2013). The difference between absolute fit and incremental fit is that the absolute fit indices assess a certain model's goodness-of-fit independently from any other model (Hu and Bentler, 1995). However, incremental fit indices are used for "assessing how well a specified model fits relative to some alternative baseline model" (Hair et al., 2013). Therefore, we utilise incremental fit indication besides absolute fit indication. In reviewing the goodness-of-fit, we saw that the hypothesised model fits the data very well, as evidenced by

the CFI of 0.923 and RMSEA 0.062. The factor loadings of each construct indicators are significant. In other words, the confirmatory factor analysis for each construct is significant and sufficient for doing structural equation modelling. The standardised factor loadings (λ) almost have a value greater than .70, indicating a strong association between the factors and their construct. Although some factors loaded below 0.70, these values have shown a moderate strength (Byrne, 2010). Some researchers (Hair et al., 2012; Tabachnick & Fidell, 2001) recommended factor loadings in ranges of 0.5 and 0.7; acceptable item reliability is attained if factor loadings values are ≥ 0.4, with sample ≥ 200 (Hair et al., 2012). As a consequence, we examined modification indices purely in the interest of completeness. After modification, we checked the model fit, and CFI was improved to 0.971 and RMSEA 0.041. Hair et al. (2013) suggest that evaluating construct validity is a consequence of two validities: convergent and discriminant validities. Convergent validity is associated with the consistent internal validity between each construct item, i.e., high or low correlations (Fornell and Larckers, 1981). Convergent validity was evaluated based on the indicators estimated coefficients of each measurement scale used in this research (composite reliability), average variance extracted and Cronbach alpha. Meanwhile, the composite reliability values demonstrated internal consistency of the latent constructs with values above the threshold of 0.70 (Byrne, 2010; Hair et al., 1998; Nunnally, 1978). The average variance extracted values of all the proposed model factors exceed the threshold value of 0.50 or above that Fornell and Larker (1981) suggested, except that the feature value and facilitating condition is less than 0.50, the AVE for feature value is close to the threshold of 0.50 as it is accepted (Byrne, 2010), but Facilitating condition' AVE is 0.436. Hair et al. (2013) explained that the convergent validity issue resulting from the variables do not correlate well with each other within their parental factor;(i.e., the latent factor is not well explained by its observed variables). According to Fornell and Larcker (1981), the average variance extracted may be a more conventional estimate of the validity of the measurement model, and "on the basis of pn (composite reliability) alone, the scholar may conclude that the convergent validity of the construct is adequate, even though more than 50% of the variance is due to error" (p. 46). As the eight constructs' composite reliability is well above the recommended level, the measurement items' internal reliability is acceptable.

Table III Results of reliability and convergent validity testing

Table IV Latent variable correlation matrix

5.3 Tests of the structural model

SEM analysis is the preferred statistical tool for studying relationships among constructs. The model, depicted in Figure 1, was tested using structural equation modelling (Table 4) with AMOS Graphics and SPSS Version 25.0 software. AMOS software is applied to confirm a theory since it utilises the ML estimate skills in the SEM analysis (Byrne, 2010). Comparing with other statistical packages for social sciences (e.g., Smart PLS), PLS-SEM handles a smaller sample size and is more predictive than a confirmatory kind of study (Hair et al., 2011). Moreover, Smart PLS software is suitable for more complex analyses (e.g., testing indirect effect, multiple moderation effects) (Hair et al., 2011). Preceding the proposed model's path

analysis, it is essential to confirm the structural model's satisfactory model fit indices. Structural model fit indicators estimation uncovered satisfactory results, with a $\chi 2$ value of 275.804 and 193 degrees of freedom. The remaining fit indices such as AGFI=.879 GFI=.915, CFI= .971, RMSEA=.041, RMR=.046 and PNFI=0.695 were reported to be well within their expected threshold values. After establishing adequate structural model fit indices, it is appropriate to conduct path analysis.

Performance expectancy significantly impacts consumptive enterprise social network use (($p < 0.05$ and $\beta = .179$) confirming H1a. the results also confirms H1b about the positive impact of the performance expectancy on contributive enterprise social network use ($p < 0.01$ and $\beta = .357$). Effort expectancy (EE) do not play a significant role in the prediction of consumptive use ($p > 0.05$ and $\beta = .086$) rejecting H2a. However, Effort expectancy is positively impacting contributive enterprise social network use, and the result shows that the regression weight for effort expectancy in the prediction of contributive use is significant ($P < 0.05$ and $\beta = .137$), confirming H2b. The global tests of model fit are the first essential for a local test to have a meaning or validity. We found that effort expectancy really ought to impact professional benefits during the model fit. Effort expectancy impact negatively on professional benefits ($P < 0.01$ and $\beta = -0.405$). The greater social influence would result in greater contributive use of the enterprise social network; the coefficient obtained is significant, thus supporting H3a ($p < 0.01$ and $\beta = 0.179$). Besides, the previous study by Chin et al. (2019) strongly supported that that Social influence is associated with more contributive use than consumptive use (Chin et al., 2019), plus they mentioned social influence would have a relatively slight impact on consumptive use. However, social influence does not significantly impact the consumptive enterprise social network between academic staff ($P > 0.05$ and $\beta = .105$). Facilitating conditions has been found to non-significant impact on consumptive and contributive enterprise social network use, thus not confirming H4a and H4b ($P > 0.05$ and $\beta = .056$; $P > 0.05$ and $\beta = -.150$). Facilitating conditions emerged as a negative predictor for a contributive enterprise social network use in higher education. The features of enterprise social networks (e.g. subscribing, tagging, followers and high profile users) empowers academic staff to share and consume knowledge on enterprise social network platforms considerably ($P < 0.05$ and $\beta = .259$; $P < 0.05$ and $\beta = .240$). These results are in accordance with H5a and H5b, respectively. Relationship expectancy has also been found to exert a direct influence on consumptive and contributive enterprise social network use ($P < 0.01$ and $\beta = .467$; $P < 0.05$ and $\beta = .228$) thus, confirming H6a and H6b. Finally, the greater the academic staff uses enterprise social network for gaining information and knowledge from the platform, the higher benefits the knowledge seekers will receive. Thus, the result is significant and confirm H7 ($P < 0.01$ and $\beta = 0.709$).

Table V Summary of hypotheses testing results

6. Discussion

This study investigated the influence of UTAUT factors (i.e., Performance expectancy, effort expectancy, social influence and facilitating conditions) and the additional constructs- feature value and relationship expectancy on consumptive and contributive use of enterprise social

networks. A construct of 'professional benefits' was used to measure the benefits received by knowledge seekers. Moreover, our hypothetical model suggests that these factors have a diverse impact on these two paired types of enterprise social network use.

6.1 Factors influencing enterprise social networking system/site usage for knowledge sharing.

6.1.1 Performance Expectancy and Relationship expectancy

The results suggest that Performance expectancy and relationship expectancy are influential factors in predicting both types of enterprise social network use (consumptive and contributive). Performance expectancy outcomes are aligned with other studies which rely on the original UTAUT model (Nassuora, 2012; Thomas et al., 2013; Wang et al., 2009; Mosunmola et al., 2018) in different settings (i.e., higher education, commercial contexts). Kalra and Baral (2019) found that PE is a critical determinant of enterprise social networking usage for knowledge sharing. This factor increased the user's performance, reward, identification, and admiration (Van der Heijden, 2004). However, the studies by Birch and Irvine (2009), Attuquayefio and Addo (2014) and Jairak et al. (2009) demonstrate PE to be statistically insignificant with the behavioural intention, which contradicts the findings of our study. Although Chin et al. (2019) and Wang et al. (2014) discovered if a user has a superior performance expectancy, they are more expected to consume from enterprise social network than to contribute to it. This finding too conflicts with our results. We found that performance expectancy impacts more significantly on contributive enterprise social network use than consumptive enterprise social network use. This can be explained that the more a user believes that other users realise and confirm his/her self-view, the more feelings of mental harmoniousness in the relational discussion the user has (Thomas-hunt et al., 2003). This, in turn, encourages the leading individual to continue the collaboration and contribute knowledge to it.

According to Baker et al. (2013), performance expectancy is the extent an academic staff believes the platform will help them do their jobs better. According to Venkatesh et al. (2003), the expected outcome separated into job-focused expectations and individual targets. The qualitative study by Gruzd et al. (2012) on examining the role of social media knowledge sharing between academic staff revealed that performance expectancy would be associated with intention and use of social media among scholars. However, it is plausible that performance expectancy is the main motivator for using any information technology between academic staff due to the highly individually competitive academic research environment. Based on our results, 36% of academic staff used Yammer as a part of their work;- Kazemian and Grant (2020) revealed that academic staff used Yammer to contribute and acquire information about upcoming research activities (i.e. events, workshops, funding opportunities). Consequently, there will be intensified competition among community groups for getting grants from community resource systems. Moreover, Gruzd et al. (2012) found two top benefits of consumptive use: establishing new connections and strengthening the existing connection between academic staff using social media tools (Rapp et al., 2013; Kent, 2008). The new construct, relationship expectancy, has an outcome that is not consistent with previous studies (Chin et al., 2019). We found that relationship expectancy impacts both consumptive and contributive enterprise social network use. However, Chin et al. (2019) believed that

relationship expectancy is more associated with contributive use due to establishing a positive reputation. However, our results show that consumptive use is a more effective means of relationship engagement than contributive use. Despite that, consumptive use usually is more passive and not directly seen by other corporation members (Chin et al., 2019). Since academic staff compete against each other to acquire the required information (e.g., grant opportunities), they need to build a relationship and connection with those who contribute to the platform. Therefore, knowledge seekers believe that using enterprise social network will provide benefits through a collaborative relationship with researchers may help community groups prioritise their research activities and resource allocations and help them compete successfully for funds.

6.1.2 Effort Expectancy

Our results indicate that effort expectancy significantly impacted contributive use but not on consumptive use. This finding is interesting, which has not been shown in the earlier literature. This result shows that consumptive use and contributive use are distinctive enterprise social network uses powered by diverse predictors. However, the studies by Nassuora (2012), Thomas et al. (2013), Wang et al. (2009), Jairak et al. (2009) and Mosunmola et al. (2018) indicates a "significant positive effort expectancy influence on intention to use social media tools". Chin et al. (2019) uncovered that effort expectancy had not significantly impacted contributive enterprise social network use. They believed that consumptive use requires more expertise-demanding tasks such as searching, filtering, and digesting the content posted on the enterprise social network. Therefore, they found that lower effort expectancy leads to more consumptive than contributive enterprise social network use. This contradictory result in our study may be attributable to the motivation to use the platform in higher education that still necessitates considerable learning (Baptista et al., 2015) and continual adjustment of expected effort (Trier and Richter, 2013). The finding may also be attributable to the recentness of these platforms (i.e., Microsoft Teams and Slack) implementation across universities which might have appeared as a cause, constraining the user's exposure and awareness about its potential (Kalra and Baral, 2019). Higher education academics may have a pretty strong sense of expertise, and flexibility, to new tools contrasted with other types of users (Hu et al., 2020; Wang et al., 2009). Although most of our participants use enterprise social network for less than three years in a university, academic staff have experience with using public social networking (e. g Facebook, Twitter, and LinkedIn) tools for a long time. Therefore, they might see that effort expectancy is not an essential factor affecting intention and enterprise social network consumptive use.

6.1.3 Social Influence

The findings reveal that Social influence has no significant impact on consumptive use; however, this factor significantly influences enterprise social network contributive use. This finding is consistent with Chin et al. (2019) and Kim et al. (2006). Kelman (1985) said that pioneer others impact user's technology use through three procedures, namely "compliance, internalisation and identification". Kelman's (1985) 'compliance' happens when a user realises that another wants them to do a particular behaviour and that behaviour is rewarded or penalised according to compliance. This insignificant result for compliance is not surprising because participation in enterprise social network platforms was voluntary, and consumptive

users can remain anonymous. Thus, most users may not feel the need to conform to other expectations (Grant and Preston, 2019).

Bagozzi and Dholakia (2014) study support this, with 'identification' and 'internalisation' to be prominent social influences of the virtual community on user participation. Kelman (1985) added that he adopts the prompted behaviour because the individual expects to achieve specific rewards or approval, and thus, the satisfaction derived from compliance is because of the social effect of accepting influence. The study by Grant (2016), exploring the early adoption of social media tools across the supply chain in the UK home insurance market, reveals that the upstream supply chain will tender for repair work with the insurer who can decide which supplier to utilise for renovations. Therefore, a buyer or supplier plays a dominant structure in the market and opposing vendors should compete against each other to show off their buyer's capabilities to win bids. Therefore, Grant (2016) and Bagozzi and Dholakia (2014) studies are consistent and support 'identification' and 'internalisation' to be leading social influences of the simulated community.

In contrast, academic staff who consume or acquire knowledge or information from the platform are more passive and need-based; thus, social influence has a minus effect. Furthermore, some of our participants use Yammer, and the previous study by Kazemian and Grant (2020) uncovered that there is a one-way of exchanging knowledge between academic staff, and only those users are providing knowledge to the platform is visible. Since the competition between academic staff is high when opportunities (e.g., funding work programmes) arise, they avoid being visible on the platform due to being afraid of losing this valuable knowledge. They do not intend to satisfy their managers or other colleagues on the platform. Therefore, social influence had no impact on enterprise social network consumptive use.

6.1.4 Facilitating Conditions

The finding shows that facilitating conditions are an insignificant predictor for both consumptive use and contributive use and have a reverse impact on contributive use. This result contradicts with Chin et al. (2019), Aral et al. (2013), Beck et al. (2014) findings. They found that facilitating conditions (e.g., educating, guidelines, training, and awareness events) were identified as predictors for motivating workers to use the platform to acquire and collect knowledge (Chin et al., 2019; Aral et al., 2013; Beck et al., 2014). Since this data was collected before the Covid-19 pandemic initiated and finishes at the early stages of a pandemic; Academic staff utilised enterprise social network voluntarily based, and another platform, Microsoft Teams, was recently employed. On the other side, the focus group with Yammer users in our case earlier revealed that the university provides several training and education sessions for academic staff and provides awareness events on the platform (Yammer) (Kazemian and Grant, 2020). Since participating in these training was voluntary, the users believe that investing in this kind of platforms is useless and ineffective. Another explanation is that this finding might be attributed to the element of competency between scholars, and it refers to the mentality of consumptive users that they avoid exchanging knowledge that may not record in the broader platform (e.g., Yammer).

6.1.5 Feature Value

The new conceptualised relationships between feature value, consumptive use and contributive use are significant. The result is congruent with Slaughter and Kirsch (2000) discovered that higher credibility leads to greater knowledge sharing between knowledge contributors and knowledge seekers. The earlier study (Kazemian and Grant, 2020) elucidates that consumptive users could obtain needed information by easily following up with experts (contributors). Moreover, we observed earlier that users re-shared the posts several times relevant and useful to academic staff's work. Therefore, reposting reduced worker response time to consumer demands, the decreased time needed for new employee preparation and improved overall customer service (Kankanhalli et al., 2011). Panahi et al. (2015), Grace and Leskovich (2012) and Kywe et al. (2012) have argued that tagging increases users' chances to discover and retrieve new knowledge via the use of tagging.

6.1.6 Professional Benefits

The new conceptualised relationships between professional benefits and consumptive use are significant. The more users are being updated from the latest academic work programme opportunities, participating in academic workshops, applying, and receiving a research grant, the higher consumption from the platforms. This result is consistent with Gruzd et al. (2012), Ortbach and Recker (2014) discovered that academic staff use social media to update their research work and promote scholarly work. Also, they found that these benefits are contributing to the scholar's career success indirectly. However, other items such as the concept of self-Promotion could feed into professional benefits from using social media. This is an area that requires need some future research.

7. Conclusion

7.1 Practical and Theoretical Implications

This study makes several contributions to the literature. From a theoretical perspective, this research has extended the UTAUT to include enterprise social network usage's practical environment. Our expanded UTAUT model highlights predictors that impact consumptive and contributive behaviour in using enterprise social networks and the relative significance of these factors. The findings suggest the underlying factors of our model impact contributive use more than consumptive use. Knowledge providers involve more straightforward tasks (e.g., posting/sharing information) and require less assistance and organisational facilitation; thus, it was expected that these factors lead to more consumptive use than contributive use.

In contrast to Chin et al. (2019) assumption about the nature of contributive use, our finding reveals that these factors lead to more contributive use than consumptive use and, consequently, a new contribution to the higher education research context. More specifically, our results show that contributive use was found to be significantly affected by PE, EE, SI, FV and RE, while FC did not play a prominent role in influencing contributive and consumptive enterprise social network use. Our results also reveal that FV and RE significantly impact consumptive enterprise social network use. Further, we found that the greater users consume from the platform, the more benefits (e.g., receiving research grants, getting an academic position, taking apart in a workshop) will get. Overall, the proposed model achieved an acceptable fit and explained 84 and 66 per cent of the variance of consumptive and contributive enterprise social network, respectively, which is higher than that of the original UTAUT.

From a practical viewpoint, this research also provides several valuable contributions to universities. Most academics and university administrators would accept that the importance of getting research grants is on the rise (Polster, 2007). Therefore, these platforms turn scholars into competitors for research funding. Based on our results, academic staff avoid exchanging knowledge on intra-organisational platforms to fear losing valuable information; they prefer to be anonymous. They prefer to talk with a person who wrote a post in private (e.g., telephone conversation, email or face to face). Although many other studies focusing on individual's information-related behaviours and thoughts toward using collaborative social network within professional firms, they found that employees are competing to impress their managers on the platform (Grant, 2016; Bagozzi and Dholakia, 2014). The existing literature suggests that employees build their relations with others on a self-interested estimation of time and effort developed (cost), benefits (e.g., financial rewards) and social rewards (e.g., position, praise, and respect) (Lin et al., 2008). On the other side, other enterprise social networks such as Microsoft Teams and Slack has been recently implemented in higher education communities and based on the results, the usage patterns are predominantly contributing than consuming. This deficiency emanates from disregarding the value of social network use by academic staff and seeing it as a time-wasting tool in universities. Since this study has been conducted before the COVID-19 pandemic happened and finished at the early stages of the pandemic, the use of enterprise social networking (e.g., Yammer) was voluntarily, and there was not any institutional pressure and only people who are seeking something more casual are interested in using the platform. However, other tools (e.g., MS Teams and Slack) have been implemented later within universities. Once the pandemic happened, these tools have become a delivery for the university products and services and these tools are used for all formal and informal communication (i.e., face to face chats). Therefore, universities have a requirement to use these tools for students and staff interactions, which means institutional pressure on them. Therefore, enterprise social networks should be considered an integrated interaction tool and other corporate applications to encourage using it.

Furthermore, our results elucidate that social influence plays a prominent predictor for contributive use. Firstly, universities can recruit leading people involved and passionate social media users, such as university agents, to support social platform use and boost workers' employment. Secondly, universities can organise campaigns regularly to raise employee's awareness and build the strength of enterprise social network use. Since academic staff emphasise more on their personal successes instead of the success of shared organisational purposes, we suggest that universities ought to build a culture that heightens the importance of relationships among users and that also displays care and concern for other academic staff' benefits and requests.

A limitation of the study is the use of a one-time survey only. It often takes time to develop benefits from information technology adoption and use (Newell, 2015). The crisis caused by covid-19 and the resulting impact on both the commercial and academic world will undoubtedly impact contributive and consumptive use. For university workers now working remotely, the lack of an enterprise social network would cause significant challenges in their daily job, such as online teaching and online meetings with colleagues. Additional work should include a longitudinal study focusing on the change in enterprise social network use behaviour among academic staff and the fundamental aspects influencing this change. Future work can

also include installing software applications (e. g Databricks and Apache Spark) that collect platform usage behaviour over time, which can then be analysed using state-of-the-art artificial intelligence (AI) techniques.

8. References

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Appendix:

Figure 2 Path Analysis- AMOS GRAPHICS

Skewness and kurtosis indices for various distribution