Content Validation and Pilot Testing of an Instrument for Measuring Academic Social Media Knowledge Sharing

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ABSTRACT

Academic social media (ASM) provides opportunities for scholarly communication, collaboration, and knowledge sharing among academicians in higher education institutions (HEIs), yet contextually appropriate measures of ASM knowledge sharing remain limited. This study developed, adapted, and preliminarily evaluated an integrated measurement instrument for assessing ASM knowledge sharing among academicians in HEIs in Nigeria. Measurement items were drawn predominantly from established scales and contextualised within the proposed Motivation Opportunity Ability and Technology (MOAT) model. Six experts were initially invited to review the instrument, of whom four returned completed evaluations before pilot testing. The pre-pilot 56-item instrument achieved an S-CVI/Ave of 0.960; 47 items obtained unanimous expert agreement (I-CVI = 1.00), while nine obtained three of four agreement (I-CVI = 0.75). Pilot testing with 62 academicians produced Cronbach's alpha coefficients ranging from 0.867 to 0.959 across the 12 constructs, indicating satisfactory preliminary internal consistency. Following the pilot study, the two outstanding expert evaluations informed further refinement, including the addition of one Facilitating Conditions item (FC5), resulting in a 57-item instrument. The findings provide preliminary evidence of content validity and internal consistency for the 56-items, supporting further psychometric evaluation using the main study dataset.

Keywords: Academic Social Media; Knowledge Sharing; MOAT; Content Validity; Instrument Adaptation; Pilot Testing, Higher Education

INTRODUCTION

In the contemporary knowledge economy, the ability of organizations to create, share, and apply knowledge has become a critical determinant of innovation, organizational performance, and sustainable competitive advantage (Ahmad et al., 2023; Obrenovic et al., 2022; Sathish Kumar et al., 2021) . Within higher education institutions (HEIs), knowledge sharing (KS) is particularly important because it supports research collaboration, scholarly communication, innovation, and the creation and dissemination of knowledge (Doronin et al., 2021; Shaukat et al., 2023). As HEIs increasingly embrace digital transformation, academicians are no longer confined to conventional face to face interactions but increasingly rely on digital platforms to exchange research findings, professional experiences, and academic resources (Chedid et al., 2019; Fauzi et al., 2023; Liu et al., 2026). Recent evidence further indicates that digital platforms facilitate professional interaction, scholarly engagement, knowledge discovery, and knowledge sharing among academicians, although access to and frequent use of these platforms do not necessarily translate into sustained knowledge sharing behaviour (Liu et al., 2026; Shehabat & Mryyan, 2026). Consequently, understanding how knowledge is shared through digital platforms in higher education has become an important area of inquiry for researchers and higher education administrators alike (Ahmad et al., 2023; Al-Kurdi et al., 2020a).

The rapid advancement of emerging technologies has fundamentally transformed the way knowledge is created, communicated, and disseminated within HEIs. The emergence of Web 2.0 technologies and digital scholarly platforms has expanded opportunities for academicians to collaborate beyond institutional and geographical boundaries, enabling continuous interaction and knowledge exchange in virtual environments (Chedid et al., 2022; Fauzi et al., 2023; Geidam & Dahlan, 2025). Among these technological developments, academic social media (ASM) platforms including ResearchGate, Academia.edu, LinkedIn, and similar scholarly networking platforms have become important channels for sharing research outputs, establishing academic networks, enhancing research visibility, and facilitating scholarly communication (Ajibade & Muchaonyerwa, 2023; Artino et al., 2026; Fan & Beh, 2024a; Fauzi et al., 2023; Shehabat & Mryyan, 2026). Recent literature further indicates that social media can extend the reach and visibility of scholarly work and facilitate its discovery and engagement by relevant audiences, while academic social networking environments support professional interaction, knowledge discovery, and knowledge sharing among academicians (Artino et al., 2026; Shehabat & Mryyan, 2026). Consequently, ASM has evolved beyond a repository of research publications to become an interactive environment that supports collaboration, professional networking, and multidimensional KS among academicians.

As the adoption of academic social media (ASM) continues to expand within HEIs, there is a growing need for reliable and contextually appropriate instruments to measure how academicians engage in KS through these platforms. Accurate measurement of KS through ASM is fundamental to theory development, empirical investigation, and evidence based decision making because the quality of research findings depends largely on the validity and reliability of the measurement instrument employed (DeVellis & Thorpe, 2021). Although numerous studies have examined KS behaviours in organizational and educational settings, many have relied on measurement scales developed for conventional knowledge management environments or general social media platforms, which may not adequately capture the unique characteristics of ASM. More recent research has begun to contextualize established measures for professional social media use. For example, Liu et al. (2026) adapted established technology acceptance measures to the professional social media context of university teachers and distinguished knowledge sharing behaviour from general platform use and engagement. Consequently, there is an increasing recognition that measurement instruments should be carefully adapted and empirically validated before being applied to new technological environments and cultural contexts to ensure that they accurately represent the constructs under investigation.

Despite the growing body of research on KS and the increasing adoption of ASM in higher education, important methodological gaps remain (Geidam & Dahlan, 2025). Existing empirical studies have predominantly focused on examining the determinants and outcomes of KS behaviours, while comparatively fewer studies have focused on systematically adapting and evaluating integrated measurement instruments suitable for assessing KS through ASM (Fan & Beh, 2024b; Fauzi et al., 2023). Recent studies have further demonstrated that ASM knowledge sharing is influenced by different motivation, opportunity, ability, and technology factors across higher education contexts. For example, Liu et al. (2026) identified perceived usefulness, behavioural intention, and active professional engagement as important predictors of social media based KS among university teachers in Shanghai, while Shehabat and Mryyan (2026) highlighted the roles of academic engagement and social capital mechanisms in knowledge discovery and sharing among academicians in Jordan. These studies extend understanding of ASM KS but also illustrate that existing evidence is distributed across different theoretical perspectives and sets of determinants rather than an integrated measurement model. Furthermore, many existing measurement scales were originally developed and validated in organizational knowledge management settings, general social media environments, or specific national and institutional contexts (Al-Kurdi et al., 2020; Jolaee et al., 2014; Ramayah et al., 2014). Although these instruments have demonstrated satisfactory psychometric properties within their original settings, differences in technological environments, institutional practices, and socio-cultural contexts may limit their direct applicability to academicians across different higher education settings, including Nigeria (Ajibade & Muchaonyerwa, 2023; Awoyemi & Agbetuyi, 2024). Building upon established measurement scales reported in the KS, technology adoption, and information systems literature, the present study systematically integrates and adapts measurement items to the context of ASM among academicians in HEIs in Nigeria. Consequently, the contextual adaptation and preliminary evaluation of these measures are

necessary to establish their relevance and internal consistency before comprehensive psychometric validation using the main study dataset (Boateng et al., 2018; DeVellis & Thorpe, 2021).

The adaptation and evaluation of existing measurement instruments are widely recognized as essential methodological practices when instruments are applied to new contexts (Boateng et al., 2018; DeVellis & Thorpe, 2021). Although several KS instruments have demonstrated satisfactory psychometric properties in previous studies, the emergence of ASM has introduced new patterns of scholarly interaction that require contextually relevant measurement. Moreover, differences in higher education systems, digital infrastructure, institutional culture, and technology adoption across national and institutional contexts further underscore the need to evaluate the content validity and preliminary reliability of adapted instruments before their application in large scale empirical studies (Boateng et al., 2018; Hair et al., 2019). Such preliminary evaluation provides evidence that the adapted items are relevant to the intended context and demonstrate adequate internal consistency, while comprehensive assessment of construct validity, convergent validity, discriminant validity, and structural relationships requires subsequent analysis using the main study dataset.

Against this background, this study presents the content validation and pilot testing of an adapted instrument for measuring KS through ASM among academicians in HEIs in Nigeria. Specifically, the study evaluates the content validity of the adapted measurement items through expert review, examines the preliminary internal consistency of the instrument using pilot study data, and refines the instrument for subsequent large scale empirical investigation. The resulting instrument provides a contextually adapted basis for measuring ASM KS and its associated determinants among academicians in Nigerian HEIs, while comprehensive assessment of its measurement properties and the proposed structural relationships is reserved for the main study.

LITERATURE REVIEW

Knowledge Sharing in Higher Education

Knowledge sharing is central to the functioning of higher education institutions (HEIs), where teaching, research, innovation, and community engagement depend on the exchange and development of knowledge among academicians (Al-Kurdi et al., 2020; Doronin et al., 2021; Shaukat et al., 2023). Unlike knowledge sharing in conventional organizational settings, academic knowledge exchange encompasses formal and informal activities, including written contribution, organizational communication, personal interaction, and communities of practice (Ramayah et al., 2014; Yi, 2009). Knowledge sharing among academicians is therefore better understood as a multidimensional behavioural process rather than as a single act of information transfer. Recent evidence reinforces this distinction by showing that academic knowledge sharing through digital platforms involves professional engagement and purposeful knowledge exchange rather than simply frequent social media use (Liu et al., 2026).

Digital technologies have extended these activities beyond conventional face to face interactions, seminars, conferences, and institutional boundaries. Academicians can now exchange research materials, expertise, feedback, and professional information continuously across geographical and institutional settings (Chedid et al., 2020; Fauzi et al., 2023). However, increased opportunities for digital interaction do not necessarily translate into effective knowledge sharing behaviour (Liu et al., 2026). Participation may therefore reflect a combination of individual motivation, institutional opportunity, ability, and technological conditions (Liu et al., 2026; Shehabat & Mryyan, 2026). Consequently, measuring academic knowledge sharing requires attention not only to the behaviour itself but also to the conditions that facilitate academicians' participation in digital knowledge exchange.

Existing knowledge sharing measures provide an important foundation for such assessment, but their applicability depends on the context in which knowledge exchange occurs. Ramayah et al. (2014), for example, conceptualised knowledge sharing through multiple forms of knowledge contribution, providing useful behavioural indicators for the present study. Nevertheless, measures developed for broader organizational or conventional knowledge management environments cannot automatically be assumed to represent knowledge sharing practices occurring through academic social media. Recent research reinforces

this concern by showing that measures of academic behaviour in digital environments require contextualisation to distinguish professional knowledge sharing from general social media use or technology adoption (Liu et al., 2026). The shift from conventional knowledge sharing to knowledge sharing through ASM platforms therefore highlights the need to adapt existing measurement scales rather than apply them without modification.

Academic Social Media and Knowledge Sharing

Academic social media (ASM) encompasses digital platforms used to support scholarly communication, professional networking, research dissemination, and academic collaboration. Platforms such as ResearchGate, Academia.edu, LinkedIn, and related scholarly networking environments enable academicians to disseminate research outputs, interact with disciplinary communities, identify collaborators, obtain scholarly information, and extend the visibility of their work beyond institutional and geographical boundaries (Ajibade & Muchaonyerwa, 2023; Chedid et al., 2022; Fan & Beh, 2024a; Fauzi et al., 2023). Recent studies extend this view by showing that academic social networking environments support knowledge discovery, peer interaction, professional community participation, and knowledge sharing, while social media can also increase the reach, accessibility, and engagement of scholarly work (Artino et al., 2026; Shehabat & Mryyan, 2026). These characteristics make ASM an increasingly relevant environment for academic knowledge exchange.

However, the availability of ASM does not imply uniform participation in knowledge sharing. Recent evidence indicates that digital scholarly interaction is shaped by multiple motivation, opportunity, ability, and technological conditions rather than platform availability alone (Liu et al., 2026; Shehabat & Mryyan, 2026). Academicians may have access to the same platforms but differ in their motivation to contribute knowledge, institutional support, confidence in other users, collaborative engagement, digital competence, technological readiness, and perceptions of the usefulness of these platforms. Perceived usefulness and active professional engagement have been associated with university teachers' social media knowledge sharing, while ability factors such as trust can also contribute to knowledge exchange within academic social networks (Liu et al., 2026; Shehabat & Mryyan, 2026). Consequently, explaining ASM knowledge sharing requires a broader perspective than platform access or general social media use alone.

A further problem concerns measurement. Many existing scales relevant to knowledge sharing and technology use were developed independently and for different theoretical or empirical contexts. Knowledge sharing scales primarily measure contribution behavior, technology adoption measures focus on perceptions of technology, and other instruments assess organizational, motivational, ability or relational, and technological factors separately. Recent research illustrates this fragmentation, with studies of academic social media knowledge sharing drawing on specific theoretical perspectives and selected sets of constructs rather than a common integrated measurement framework (Liu et al., 2026; Shehabat & Mryyan, 2026). Although these measures remain valuable, their fragmented origins create a challenge when the objective is to assess ASM knowledge sharing as an integrated phenomenon within higher education. Direct application may also overlook contextual characteristics of academic work and the institutional environment in which scholarly knowledge exchange occurs.

This limitation is particularly relevant to the present study because its focus is not simply whether academicians use ASM, but the combination of conditions associated with their knowledge sharing behaviour through these platforms. Accordingly, there is a methodological need to integrate and contextually adapt established measures within a coherent framework that reflects motivation, opportunity, ability, and technology factors of ASM knowledge sharing. The present study addresses this need through the proposed MOAT model discussed in Section 2.3.

Theoretical Foundation

The proposed model organizes the determinants of ASM knowledge sharing into four broad factors: Motivation, Opportunity, Ability, and Technology factors. Motivation factors capture the intrinsic and extrinsic drivers that encourage academicians to share knowledge, while Opportunity factors represent

institutional conditions that enable or constrain such behavior, including institutional support, organizational culture, and organizational policy. Ability factors reflect the capacities that enable academicians to participate effectively in knowledge sharing interactions. Within this study, Ability factors are conceptualized beyond technical competence to include both individual and relational capacities required for effective academic knowledge exchange. Accordingly, Digital Literacy represents the capacity to use ASM platforms effectively, Trust reflects the relational capacity to engage in knowledge exchange with confidence in colleagues' reliability and reciprocity, and Academic Collaboration represents the capacity to participate in joint scholarly interaction and knowledge exchange. This broader operationalization is consistent with recent evidence that knowledge sharing through digital platforms in higher education depends not only on technological competence but also on professional engagement and relational resources that facilitate interaction, trust, and collaboration (Liu et al., 2026; Shehabat & Mryyan, 2026). Technology factors capture the technological conditions supporting ASM use through Technology Readiness and Facilitating Conditions. Perceived Usefulness is subsequently positioned as a mediating construct linking these determinants to Knowledge Sharing Behavior.

The placement of Trust and Academic Collaboration under Ability is therefore based on their enabling role in academic knowledge exchange rather than their treatment as technical skills. In the present study, they represent relational capabilities through which academicians engage with scholarly peers and participate in collaborative knowledge sharing activities. This interpretation is consistent with evidence that relational resources, including trust and reciprocal scholarly interaction, can facilitate knowledge exchange within academic social networks (Shehabat & Mryyan, 2026). Taken together, the proposed model provides an integrative basis for organizing factors that are otherwise examined separately across the knowledge sharing and technology adoption literature. Its application in the present study does not presume that the proposed relationships have already been empirically validated. Rather, the framework provides the theoretical structure for developing and organizing the measurement instrument, with Perceived Usefulness positioned as the proposed mediator and Knowledge Sharing Behavior as the outcome construct. The present study therefore focuses on the preliminary evaluation of the instrument, while empirical assessment of the measurement and structural relationships is reserved for the main study.

Instrument Adaptation and Content Validation

Previously validated measurement scales provided useful foundations for instrument development because they permit researchers to build on established conceptualizations and facilitate comparison with earlier research (Boateng et al., 2018; DeVellis & Thorpe, 2021). Their prior use, however, does not guarantee validity when transferred to a different technological, institutional, or cultural setting. Differences in terminology, respondent characteristics, organizational conditions, and patterns of technology use can alter how measurement items are understood. Recent research illustrates this need for contextualization, with Liu et al. (2026) adapting established technology acceptance measures specifically to university teachers' professional use of social media rather than applying the original measures without modification. Consequently, contextual adaptation requires more than replacing words within existing items.

This issue is particularly relevant to the present study because the proposed instrument integrates measures originating from different streams of literature, including knowledge sharing, technology adoption, organizational conditions, motivation, ability factors, and digital competence. Although these established measures provide conceptual foundations, they were not necessarily developed specifically for ASM knowledge sharing among academicians in HEIs in Nigeria. Their integration therefore requires attention to both conceptual consistency and contextual relevance. Adaptation in this study consequently involved selecting items that corresponded with the constructs specified in the proposed model and modifying their wording where necessary to reflect academic knowledge exchange through ASM.

Content validation provides an important preliminary assessment of whether such adapted items adequately represent their intended constructs. Expert assessment can identify problems of relevance, clarity, representativeness, ambiguity, and contextual appropriateness before an instrument is exposed to larger scale empirical testing (Boateng et al., 2018; Polit et al., 2007; Polit & Beck, 2006). Importantly, however, content validity is conceptually distinct from construct validity. Expert agreement that an item appropriately

represents a construct does not establish its empirical factor structure, convergent validity, discriminant validity, or relationship with other constructs. These properties require subsequent empirical evaluation using an adequately sized main study sample. This distinction is particularly important for an integrated instrument such as the one proposed in this study. Accordingly, the present study uses expert content validation as an initial evaluation of the contextually adapted instrument rather than as evidence of comprehensive psychometric validation. The process establishes whether the proposed items are sufficiently relevant and contextually appropriate to proceed to pilot testing, while subsequent measurement model evaluation remains necessary using the main study dataset.

Pilot Testing

Pilot testing provides an intermediate stage between expert based instrument refinement and large scale empirical evaluation. It allows researchers to examine questionnaire administration and obtain preliminary evidence concerning the internal consistency of adapted measurement scales before their use in the main study (Boateng et al., 2018; DeVellis & Thorpe, 2021). This stage is particularly relevant when items have been drawn from different sources and contextualized for a new population because satisfactory performance in their original settings does not necessarily guarantee comparable performance after adaptation. Recent research in the academic social media context illustrates this practice, with Liu et al. (2026) pilot testing contextually adapted measures with university teachers to assess item clarity and contextual appropriateness before full scale administration.

Internal consistency assessment during pilot testing can indicate whether items assigned to the same construct produce sufficiently consistent responses (DeVellis & Thorpe, 2021). Nevertheless, Cronbach's alpha should not be treated as evidence of comprehensive measurement validity. A high coefficient indicates consistency among items but does not establish unidimensionality, convergent validity, discriminant validity, or the empirical distinctiveness of theoretically related constructs (DeVellis & Thorpe, 2021; Hair et al., 2019). Very high coefficients may also warrant examination for possible item overlap. Pilot reliability findings should therefore inform subsequent instrument refinement rather than serve as the final validation of the measurement model.

METHODOLOGY

Research Design

This study employed a quantitative methodological design to develop and conduct a preliminary evaluation of an integrated measurement instrument for assessing knowledge sharing through academic social media (ASM) among academicians in higher education institutions (HEIs) in Nigeria. The instrument development process involved the identification and contextual adaptation of measurement items from established scales, expert content validation, pilot testing, and subsequent instrument refinement. Six subject matter experts were initially invited to evaluate the instrument. At the time scheduled for pilot testing, completed assessments had been received from four experts (see Table 1), and their evaluations were therefore used for the initial content validity assessment and pre pilot refinement of the 56 item questionnaire. The remaining two expert assessments were received after completion of the pilot study and were subsequently considered in refining the instrument for the main study. This process resulted in a final 57 item instrument. The present study provides preliminary evidence of content validity and internal consistency; comprehensive assessment of construct validity and the proposed structural relationships is reserved for the main study.

Instrument Development and Adaptation

The measurement instrument was developed primarily through the systematic integration and contextual adaptation of established measurement scales reported in the knowledge sharing, technology adoption, social media, and information systems literature. Items were selected based on their conceptual correspondence with the constructs represented in the proposed model and were adapted to reflect knowledge sharing through ASM among academicians in HEIs in Nigeria. A small number of context specific items were

developed where existing measures did not adequately represent aspects considered relevant to the study context.

The measurement items were drawn from multiple established sources. Knowledge Sharing Behaviour was adapted from Ramayah et al. (2014), Perceived Usefulness from Davis (1989), and Technology Readiness from Parasuraman and Colby (2014). The Facilitating Conditions items were adapted from measures originating from Balakrishnan (2017), Shih and Fang (2004), Venkatesh et al. (2003), and Brown (2010), with some items identified through subsequent adaptations of these measures. Items measuring Intrinsic Motivation, Extrinsic Motivation, Organizational Culture, Institutional Support, Organizational Policy, Trust, Academic Collaboration, and Digital Literacy were likewise selected from established measures relevant to the respective constructs and contextually adapted for ASM. Because several items were accessed through subsequent studies that had themselves adapted earlier scales, the immediate and originating sources are distinguished in the source to item documentation where applicable. The complete source to item correspondence, including source item wording, adapted wording, and adaptation status, is provided in the supplementary item adaptation matrix presented in Appendix A.

The adaptation process involved reviewing item wording for contextual relevance, replacing general social media or organizational terminology with terminology appropriate to ASM and higher education, and refining the questionnaire structure while preserving the conceptual meaning of the underlying constructs. Most items were therefore adapted from existing measures, while a limited number were developed specifically for the study context. For example, OP4 was study developed to capture institutional policies protecting academicians when sharing knowledge and research outputs. FC5 was developed subsequently following consideration of expert feedback received after the pilot study and is therefore discussed as part of the later instrument refinement stage.

The resulting measurement framework represented four broad factors, namely Motivation, Opportunity, Ability, and Technology, together with Perceived Usefulness as a proposed mediating construct and Knowledge Sharing Behaviour as the outcome construct (see Fig. 1). The 56 item pre-pilot instrument was subjected to content validation using the four expert evaluations available before pilot testing. Subsequent refinement, informed by the two outstanding expert evaluations received after the pilot, resulted in the final 57 item instrument.

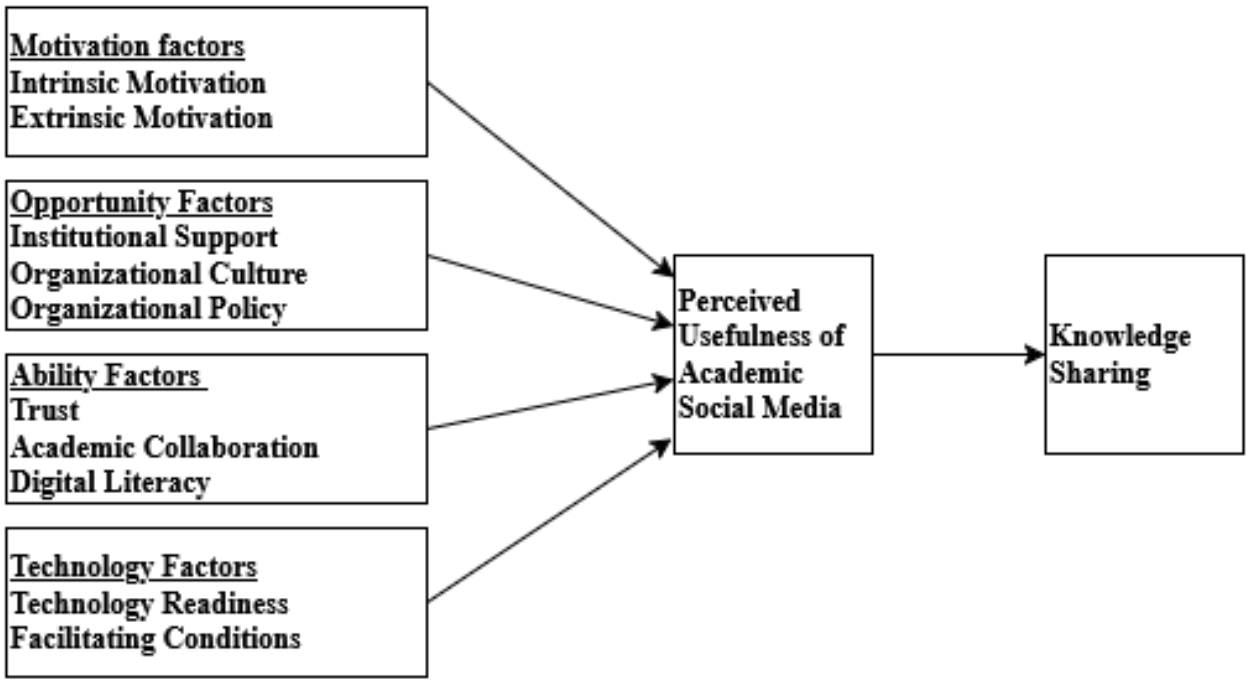


Figure 1. Proposed MOAT conceptual model guiding instrument development

Content Validation

Content validation was conducted to assess the relevance, clarity, and contextual suitability of the adapted measurement items before their use in the main study. Six subject matter experts were initially invited to review the questionnaire. The experts were purposively selected based on their academic qualifications, disciplinary expertise, research experience, and familiarity with Information Systems, knowledge sharing, social media, management, and related areas. At the time scheduled for pilot testing, completed evaluations had been received from four of the six invited experts (see Table 1). Accordingly, the initial content validity assessment and pre pilot refinement of the instrument were based on the evaluations provided by these four experts. The remaining two expert evaluations were received after completion of the pilot study and were subsequently considered during further refinement of the instrument for the main study.

The four experts whose evaluations were available before pilot testing had between 10 and 30 years of academic and research experience and represented relevant disciplinary areas, including Information Systems, Information Systems Adoption and Usage, Artificial Intelligence and Social Media Usage, and Management. A four expert panel is within the range considered acceptable for content validity assessment, although the interpretation of item level agreement requires consideration of the number of experts involved (Polit & Beck, 2006; Polit et al., 2007). Nonetheless, the initial panel of four limited the breadth of expert judgement informing the quantitative indices. The subsequent receipt of the other two assessments broadened the qualitative basis for refinement but did not change the original four-expert content validity estimates.

Table 1. Profile of Experts Involved in Content Validation

Expert	Area of Expertise	Qualification	Experience	Institutional Affiliation
E1	Information Systems Adoption and Usage	PhD	30 years	Universiti Teknologi Malaysia
E2	Information Systems	PhD	18 years	Yobe State University, Damaturu
E3	Information Systems, Artificial Intelligence, Social Media Usage and IoT	PhD	10 years	Federal Polytechnic Offa
E4	Management	PhD	14 years	Federal University Dutse

Note: Six experts were initially invited to participate in the content-validation exercise. The table presents the four experts whose completed assessments were available before pilot testing and were used to calculate the reported content-validity indices. Evaluations from the remaining two experts were received after the pilot study and were considered during subsequent instrument refinement.

The experts were provided with the questionnaire, construct definitions, and instructions for assessing the relevance of individual items. Item relevance was evaluated using a four point scale ranging from 1 (not relevant) to 4 (highly relevant). Consistent with established content validity procedures, ratings of 3 and 4 were classified as relevant for calculating the Item Level Content Validity Index (I-CVI) (Polit & Beck, 2006; Polit et al., 2007). In addition to the quantitative ratings, the experts were invited to provide qualitative comments on item wording, clarity, questionnaire organisation, response categories, and contextual suitability. The qualitative comments received before pilot testing informed the pre pilot refinement of the questionnaire. Recommendations included improvements to the sequencing and response options of demographic and ASM use questions, clarification of selected item wording, and refinement of the presentation of the questionnaire.

The pre pilot content validity assessment covered 56 measurement items. Of these, 47 items received agreement from all four experts and therefore achieved an I-CVI of 1.00, while nine items received agreement from three of the four experts, corresponding to an I-CVI of 0.75. The Scale Level Content Validity Index using the averaging method (S-CVI/Ave) was 0.960. To account for agreement occurring by

chance, the modified kappa statistic (k*) was also calculated. Items with unanimous agreement yielded k* = 1.00, whereas items receiving agreement from three of the four experts yielded k* = 0.67. For a four expert panel, these values represent excellent and good agreement beyond chance, respectively (Polit et al., 2007). The nine items with I-CVI = 0.75 were therefore not interpreted as having achieved the same level of content validity evidence as the unanimously rated items. Rather, they were retained following consideration of their theoretical relevance, good chance corrected agreement, and relevant qualitative feedback from the experts.

The experts' qualitative recommendations were considered alongside the quantitative indices. For example, recommendations addressed the organisation of demographic and ASM screening questions, the categorisation of ASM users, and the wording of selected measurement items. One expert recommended rephrasing the reciprocal trust item to improve its clarity, while another highlighted practical issues relating to internet access and data costs within the Nigerian context. These comments were used to improve the contextual appropriateness and comprehensibility of the instrument rather than being treated as additional quantitative evidence of content validity. The final wording of TRU3 in Appendix A illustrates the emphasis on mutual trust, while the concern about data costs informed the subsequent addition of FC5 described below.

The 56 item instrument resulting from this initial validation and refinement stage was subsequently administered in the pilot study. After completion of the pilot, evaluations from the remaining two experts who had been invited during the original content validation exercise were received. Because these evaluations became available only after the 56 item questionnaire had already been pilot tested, they were considered during post pilot instrument refinement and were not retrospectively combined with the four expert ratings used to calculate the pre pilot I-CVI, S-CVI/Ave, and modified kappa statistics. This approach preserves the chronological distinction between the version of the instrument subjected to pilot testing and the subsequent refinement undertaken before the main study.

Post pilot consideration of the outstanding expert feedback led to further contextual refinement of the instrument. Consideration of the cost associated with accessing ASM outside institutional internet facilities led to the inclusion of an additional Facilitating Conditions item, FC5: “I find the cost of using ASM outside office hours and beyond my institution’s Wi-Fi network affordable.” The source to item matrix identifies FC5 as a study developed item based on expert recommendation. Its addition increased the instrument from the 56 items evaluated in the pilot study to 57 items in the final instrument prepared for the main study.

Table 2. Content Validity Results and Decisions for Measurement Items

Item category	Items	No.	I-CVI	Modified kappa (k*)	Evaluation	Decision
Unanimous expert agreement	All other pre-pilot measurement items	47	1.00	1.00	Excellent	Retained
Three of four experts agreed on relevance	EM4, OC5, OP2, AC3, FC3, FC4, PU5, KS2, KS3	9	0.75	0.67	Good	Retained following expert review

Overall S-CVI/Ave = 0.960

Source: Authors' computation based on expert evaluations.

Pilot Study

Following the initial content validation and refinement process, the resulting 56 item questionnaire was pilot tested with 62 academicians to assess its administration and preliminary internal consistency before administration of the final instrument in the main study. The pilot study was intended to determine whether

the adapted measurement scales demonstrated adequate preliminary internal consistency in the study context and were not designed to establish the full psychometric properties of the proposed measurement model.

Participants were recruited using convenience sampling supplemented by peer referral. The questionnaire was administered electronically through Google Forms, with the survey link initially distributed through WhatsApp to academicians accessible to the researchers. Recipients were also encouraged to share the questionnaire with other academicians within their professional networks. This recruitment approach was used because the pilot was intended to assess instrument functioning and preliminary internal consistency rather than to generate a statistically representative sample for population level inference.

Data collection was conducted from 29 to 30 July 2026, yielding 62 complete questionnaires. Of the respondents, 37 (59.7%) were from Polytechnics, 22 (35.5%) from universities, and 3 (4.8%) from Colleges of Education. The pilot questionnaire also included a screening question on the use of ASM for knowledge sharing. Fifty six respondents indicated that they used ASM for knowledge sharing activities, while six indicated that they did not. All 62 completed questionnaires were retained for the preliminary internal consistency assessment because the purpose of this stage was to examine questionnaire administration and the internal consistency of the adapted scales rather than to test the proposed structural relationships or draw population level inferences. For the main study, the ASM use eligibility criterion was applied to ensure that the analytical sample corresponded with the target population of academicians using ASM for knowledge sharing.

Internal consistency was assessed separately for each construct using Cronbach's alpha. The pilot analysis was restricted to preliminary reliability assessment. It did not evaluate construct validity, convergent validity, discriminant validity, or the hypothesized structural and mediating relationships among the constructs. These aspects were reserved for evaluation using the larger main study dataset.

RESULTS

Content Validation Results

The content validity assessment was based on the completed evaluations received from four experts before the pilot study. Each of the 56 measurement items was evaluated for relevance using a four point scale, with ratings of 3 and 4 classified as relevant for the calculation of the Item-Level Content Validity Index (I-CVI). The Scale-Level Content Validity Index based on the averaging method (S-CVI/Ave) was subsequently calculated to assess content validity at the overall instrument level. Modified kappa (k*) was also considered to account for the possibility of chance agreement among the experts.

As presented in Table 3, 47 of the 56 items (83.9%) received relevant ratings from all four experts and consequently achieved an I-CVI of 1.00. The remaining nine items (16.1%) received relevant ratings from three of the four experts, resulting in an I-CVI of 0.75. No item recorded an I-CVI below 0.75. At the scale level, the instrument achieved an S-CVI/Ave of 0.960, indicating strong overall agreement regarding the relevance of the measurement items. The modified kappa values were 1.000 for items with unanimous expert agreement and 0.667 for items with three of four agreements. According to Polit et al. (2007), these values represent excellent and good agreement beyond chance, respectively.

Table 3. Content Validity Indices of the Adapted Instrument

Statistic	Result	Interpretation
Number of Experts	4	Subject matter experts
Total Number of Items	56	Pre-pilot measurement items
Items with I-CVI = 1.00	47 (83.9%)	Unanimous relevance agreement
Items with I-CVI = 0.75	9 (16.1%)	Three-of-four relevance agreement
Items with I-CVI < 0.75	0	None
S-CVI/Ave	0.960	Excellent scale-level content validity
Modified Kappa (I-CVI = 1.00)	1.000	Excellent

Modified Kappa (I-CVI = 0.75)	0.667	Good

Source: Authors' computation based on expert evaluations.

The nine items that obtained an I-CVI of 0.75 were EM4, OC5, OP2, AC3, FC3, FC4, PU5, KS2, and KS3,

as shown in Table 4. These items were not interpreted as having the same level of item level content validity evidence as those receiving unanimous expert agreement. However, their modified kappa value of 0.667 indicated good agreement beyond chance. They were therefore retained following consideration of their theoretical relevance together with relevant qualitative feedback from the expert review process. This decision avoided relying solely on the numerical I-CVI when determining item retention.

Table 4. Items with I-CVI of 0.75 Following Expert Review

Item	Construct	I-CVI	Modified Kappa (k)*	Decision
EM4	Extrinsic Motivation	0.75	0.667	Retained following expert review
OC5	Organizational Culture	0.75	0.667	Retained following expert review
OP2	Organizational Policy	0.75	0.667	Retained following expert review
AC3	Academic Collaboration	0.75	0.667	Retained following expert review
FC3	Facilitating Conditions	0.75	0.667	Retained following expert review
FC4	Facilitating Conditions	0.75	0.667	Retained following expert review
PU5	Perceived Usefulness	0.75	0.667	Retained following expert review
KS2	Knowledge Sharing Behaviour	0.75	0.667	Retained following expert review
KS3	Knowledge Sharing Behaviour	0.75	0.667	Retained following expert review

The distinction between item level and scale level results is important. Although the nine items with I-CVI = 0.75 did not achieve unanimous agreement among the four experts, the overall S-CVI/Ave of 0.960 exceeded the commonly recommended criterion of 0.90 for strong scale level content validity. Polit and Beck (2006) recommend reporting the method used to calculate the scale level CVI and favour S-CVI/Ave for evaluating the overall instrument. Accordingly, the results provide preliminary evidence of satisfactory content validity at the scale level, while recognising the comparatively lower expert agreement associated with the nine identified items. Following this pre pilot assessment, the 56 item instrument was administered in the pilot study. The two outstanding expert evaluations received after pilot testing were considered separately during subsequent refinement and were not included retrospectively in the four expert CVI calculations. This later refinement included the addition of FC5, resulting in the 57 item instrument prepared for the main study.

Pilot Study Reliability Results

The internal consistency of the 56 item pilot instrument was assessed using Cronbach's alpha for each of the 12 measurement constructs. The analysis was based on the 62 completed pilot questionnaires. As presented in Table 5, Cronbach's alpha coefficients ranged from 0.867 to 0.959, indicating satisfactory to high internal consistency across the measurement scales. The lowest coefficient was obtained for Extrinsic Motivation ($\alpha = 0.867$), while Perceived Usefulness recorded the highest coefficient ($\alpha = 0.959$). The analysis therefore provided encouraging preliminary evidence regarding the internal consistency of the adapted measures.

Table 5. Internal Consistency of the Pilot Study Instrument

Higher-order Construct	First-order Dimension	No. of Items	Cronbach's α
Motivation Factors	Intrinsic Motivation	5	0.926
	Extrinsic Motivation	5	0.867
Opportunity Factors	Organizational Culture	5	0.915
	Institutional Support	5	0.886
	Organizational Policy	4	0.936
Ability Factors	Trust	5	0.946

	Academic Collaboration	4	0.945
	Digital Literacy	4	0.935
Technology Factors	Technology Readiness	5	0.949
	Facilitating Conditions	4	0.886
Proposed Mediator	Perceived Usefulness of ASM	5	0.959
Outcome Construct	Knowledge Sharing Behaviour	5	0.909
Total	12 constructs	56	0.867–0.959

Source: Authors' pilot study analysis.

Although all coefficients indicated satisfactory internal consistency, the particularly high values for Perceived Usefulness (α = 0.959), Technology Readiness (α = 0.949), Trust (α = 0.946), and Academic Collaboration (α = 0.945) warrant examination for possible item overlap. For Perceived Usefulness, corrected item-total correlations ranged from 0.855 to 0.920, while alpha if item deleted ranged from 0.943 to 0.954, below the full five-item coefficient of 0.959. These results show that deleting an individual item would not increase alpha, but they do not establish that the items are conceptually distinct or free from redundancy. The items were retained for further evaluation based on the available preliminary evidence rather than the pursuit of a higher or lower alpha coefficient.

Facilitating Conditions comprised four items in the pilot study and produced Cronbach's alpha of 0.886. The pilot reliability analysis included FC1 to FC4 only; FC5 was not part of the 56 item pilot instrument. FC5 was introduced during subsequent questionnaire refinement following receipt of the outstanding expert feedback.

DISCUSSION

This study examined the preliminary measurement properties of an instrument developed to assess knowledge sharing through academic social media among academicians in higher education institutions in Nigeria. The findings provide evidence concerning two specific aspects of the instrument: expert assessed content validity and internal consistency. These findings should be interpreted as preliminary because construct validity, convergent validity, discriminant validity, and the proposed structural relationships were not examined at this stage.

The pre pilot content validation assessment showed strong overall agreement regarding the relevance of the 56 measurement items. Although 47 items (83.9%) achieved unanimous expert agreement (I-CVI = 1.00), nine items (16.1%) obtained an I-CVI of 0.75. The overall S-CVI/Ave of 0.960 exceeded the commonly recommended criterion of 0.90 for scale level content validity (Polit & Beck, 2006). The modified kappa values of 1.000 and 0.667 further indicated excellent and good agreement beyond chance, respectively (Polit et al., 2007). Taken together, these findings support the content relevance of the instrument at the scale level while indicating comparatively weaker item level evidence for the nine items that did not receive unanimous expert agreement. Their retention should therefore be understood in conjunction with their theoretical relevance and the qualitative expert feedback rather than based on the numerical I-CVI alone.

The pilot study provided additional evidence concerning the internal consistency of the measurement scales. Across the 12 constructs, Cronbach's alpha coefficients ranged from 0.867 for Extrinsic Motivation to 0.959 for Perceived Usefulness, providing satisfactory preliminary evidence of internal consistency across the constructs. The findings suggest that the items within each construct were sufficiently related to support their retention for further evaluation. However, internal consistency alone does not demonstrate that the constructs are empirically distinct or that the items adequately capture their intended latent variables. The reliability results should therefore be regarded as supporting the progression of the instrument to further psychometric assessment rather than establishing comprehensive measurement validity.

The high internal consistency coefficients, particularly for Perceived Usefulness, should therefore be interpreted alongside the conceptual coverage of the respective scales. The diagnostic results reported in Section 4.2 support provisional retention, not a definitive conclusion about item redundancy. Further

evaluation should examine inter-item correlations, item wording and indicator performance, particularly for Perceived Usefulness, Technology Readiness, Trust and Academic Collaboration. Decisions on item retention should consider both empirical evidence and the extent to which the items represent their intended constructs.

The study also demonstrates the iterative nature of instrument development. The pilot evaluation involved 56 items, whereas the two outstanding expert evaluations received after the pilot informed subsequent refinement, including the addition of FC5 to address the affordability of accessing ASM outside institutional internet facilities. The final instrument therefore comprised 57 items. Distinguishing the 56 item pilot instrument from the subsequently refined 57 item instrument ensures that FC5 is not incorrectly attributed to the pre pilot content validity assessment or pilot reliability analysis.

The contribution of the study lies primarily in the systematic contextualisation and preliminary evaluation of an integrated ASM knowledge sharing instrument. Existing research has examined academic social media knowledge sharing through different theoretical perspectives and selected technological, behavioural, and relational determinants, demonstrating the importance of contextualising measures for professional academic use (Liu et al., 2026; Shehabat & Mryyan, 2026). The present study extends this measurement oriented literature by integrating Motivation, Opportunity, Ability, Technology, Perceived Usefulness, and Knowledge Sharing Behaviour within a single proposed measurement framework for academic knowledge exchange through ASM in Nigerian higher education institutions. Rather than establishing a fully validated measurement or structural model, the findings provide a contextually grounded and empirically screened instrument for subsequent psychometric evaluation.

Accordingly, the findings should not be interpreted as evidence that the proposed MOAT measurement and structural relationships have been empirically established. The pilot study did not assess factor structure, composite reliability, convergent validity, discriminant validity, or the proposed mediating role of Perceived Usefulness. These properties require evaluation using the larger main study dataset through appropriate measurement model and structural model assessment. The present findings therefore provide preliminary evidence of content validity and internal consistency that supports further evaluation of the refined 57 item instrument, rather than comprehensive psychometric validation of the proposed model.

LIMITATIONS AND FUTURE RESEARCH

The pilot sample comprised 62 academicians recruited through convenience sampling and peer referral. Although this approach was consistent with the preliminary purpose of the study, the modest sample size, non-probability sampling and uneven representation of institution types limit the generalizability of the findings. Furthermore, network based recruitment and electronic questionnaire administration introduce the possibility of selection bias. The reported reliability coefficients should therefore be interpreted with caution as preliminary estimates of internal consistency.

A further limitation concerns the four expert evaluations available before pilot testing. Although the other two experts subsequently contributed to instrument refinement, their evaluations were not included in the reported content validity indices. Future validation would benefit from broader and more diverse expert participation and a larger sample of ASM users representing universities, polytechnics and colleges of education. The additional FC5 item requires empirical evaluation alongside the other items because it was not included in the pre-pilot content validity assessment or pilot reliability analysis.

Comprehensive psychometric evaluation in the main study should examine the factor structure, indicator performance, composite reliability, convergent validity and discriminant validity of the refined instrument. Following satisfactory measurement model assessment, structural model analysis should evaluate the hypothesized relationships, including the indirect effects through Perceived Usefulness using bootstrapping. These analyses are distinct from the preliminary content validity and internal consistency assessment reported in this study and are necessary before drawing conclusions about the empirical validity of the proposed MOAT model.

CONCLUSION

This study developed, contextually adapted, and preliminarily evaluated an instrument for measuring knowledge sharing through academic social media (ASM) among academicians in Nigerian higher education institutions. The instrument primarily integrated established measures representing Motivation, Opportunity, Ability, Technology, Perceived Usefulness, and Knowledge Sharing Behavior and adapted them to the context of digital scholarly knowledge exchange.

The pre pilot content validity assessment of the 56-item instrument, based on four completed expert evaluations, produced an S-CVI/Ave of 0.960. Of the 56 items, 47 achieved unanimous expert agreement (I-CVI = 1.00), while nine received agreement from three of the four experts (I-CVI = 0.75). The subsequent pilot study involving 62 academicians produced Cronbach's alpha coefficients ranging from 0.867 to 0.959 across the 12 constructs, providing preliminary evidence of satisfactory internal consistency. Although some constructs produced very high alpha coefficients, particularly Perceived Usefulness ($\alpha = 0.959$), the pilot diagnostics did not provide a clear basis for item deletion solely to reduce the coefficient.

Following the pilot study, the two outstanding evaluations from the original six invited experts were considered during subsequent instrument refinement. This post pilot refinement included the addition of FC5 under Facilitating Conditions, resulting in a 57 item instrument for the main study. FC5 was therefore not included in either the four expert pre pilot content validity calculations or the pilot internal consistency analysis.

The main contribution of this study lies in the systematic adaptation and preliminary evaluation of a measurement instrument for ASM knowledge sharing in higher education. Although the findings provide preliminary evidence of content validity and internal consistency, they should be interpreted in light of the limited pilot sample and initial expert panel. The reported content validity and internal consistency estimates apply specifically to the 56-item instrument. Further research is therefore needed to establish the psychometric properties of the refined 57-item instrument, including its factor structure, composite reliability, convergent validity and discriminant validity. The proposed structural relationships and the mediating role of Perceived Usefulness remain to be examined in the main study.

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APPENDIX A. FINAL MEASUREMENT ITEMS, SOURCES, AND ADAPTATION

Construct	Code	Item	Source	Modification/Adaptation	Adaptation
Intrinsic Motivation	IM1	I have the expertise, experience and insights needed to provide knowledge valuable for other members in this virtual community.	Chen & Hung (2010)	Sharing my knowledge through ASM to help other academicians is intrinsically rewarding because it allows me to demonstrate my knowledge and expertise.	Directly adapted
	IM2	It feels good to help someone by sharing my knowledge.	Y. Cai et al. (2021), adapted from Lin (2007)	Sharing my knowledge through ASM gives me personal satisfaction.	Adapted via secondary source
	IM3	Sharing my knowledge with others through Zhihu gives me pleasure.	Y. Cai et al. (2021), adapted from Lin (2007)	I personally enjoy the act of sharing academic knowledge through ASM platforms.	Adapted via secondary source
	IM4	I enjoy helping others by sharing my knowledge through Zhihu.	Y. Cai et al. (2021), adapted from Lin (2007)	I feel a sense of fulfillment when I contribute knowledge on ASM.	Adapted via secondary source
	IM5	I enjoy sharing my knowledge with others through Zhihu.	Y. Cai et al. (2021), adapted from Lin (2007)	I enjoy sharing my knowledge with other academicians through ASM platforms.	Adapted via secondary source
Extrinsic Motivation	EM1	I will receive monetary rewards in return for my knowledge sharing.	Bock et al. (2005)	I believe that sharing knowledge through ASM can create opportunities for monetary rewards.	Directly adapted
	EM2	I will receive increased promotion opportunities in return for my knowledge sharing.	Hatamleh (2023), as adapted from Lin (2007)	Career-related benefits motivate me to share knowledge on ASM.	Adapted via secondary source
	EM3	By sharing my knowledge with my colleagues, I strengthen ties	Hatamleh (2023), as adapted from Lin (2007)	Sharing knowledge through ASM strengthens my academic relationships with other academicians and professionals outside my institution.	Adapted via secondary source
	EM4	I expect to receive knowledge in return	Hatamleh (2023), as adapted from Lin (2007)	When I share knowledge through ASM, I expect to receive useful knowledge or help in return in the future.	Adapted via secondary source
	EM5	Sharing knowledge with my co-workers improves others' recognition of me	Chung & Anh (2022), as adapted from Kankanhalli et	Sharing knowledge through ASM improves my scholarly reputation and recognition among	Adapted via secondary source

			al. (2005)	peers.	
Organizational Culture	OC1	Existing university culture provides sufficient support for sharing knowledge	Jain et al. (2007) as adapted by Akosile & Olatokun (2020)	Knowledge sharing among academicians is part of my institution's culture.	Adapted via secondary source
	OC2	Information flows easily throughout the institution regardless of employee level.	Jain et al. (2007) as adapted by Akosile & Olatokun (2020)	Information flows easily among academicians in my institution, regardless of their academic rank or position.	Adapted via secondary source
	OC3	There are formal and informal activities to cultivate knowledge sharing in my university.	Jain et al. (2007) as adapted by Akosile & Olatokun (2020)	My institution promotes both formal and informal activities that encourage knowledge sharing.	Adapted via secondary source
	OC4	My university encourages knowledge-sharing in action	Sohail & Daud (2009) as adapted by Javaid (2020)	My institution encourages knowledge sharing among its staff.	Adapted via secondary source
	OC5	My university continuously encourages staff to bring new knowledge to this university.	Sohail & Daud (2009) as adapted by Javaid (2020)	My institution promotes the sharing of new knowledge among its staff.	Adapted via secondary source
Institutional Support	IS1	Top management regularly reinforces the need to share knowledge	Lin (2007), as adapted by Akosile & Olatokun (2020)	The leadership at my institution regularly emphasizes the importance of knowledge sharing among academicians.	Adapted via secondary source
	IS2	Top management of my unit provides most of the necessary help and resources to enable colleagues to share knowledge	Lin (2007) as adapted by Lo & Tian (2020)	The leadership at my institution provides necessary resources to enable knowledge sharing.	Adapted via secondary source
	IS3	My manager always set a good example in sharing his knowledge with others	Lu et al. (2006) as adapted by Nguyen (2019)	My immediate superior sets a good example by actively sharing knowledge with colleagues.	Adapted via secondary source
	IS4	My manager supports me in sharing knowledge with colleagues in other departments	Lu et al. (2006) as adapted by Nguyen (2019)	My superiors support me in sharing knowledge with colleagues across different departments.	Adapted via secondary source
	IS5	Top management of my unit always support and encourage colleagues to share their knowledge with	Lin (2007) as adapted by Lo & Tian (2020)	There is strong encouragement from institutional leaders for academicians to share their knowledge.	Adapted via secondary source

		colleagues			
Organizational Policy	OP1	There exists university policy on knowledge sharing	Akosile & Olatokun (2020)	My institution has clear policies that encourage knowledge sharing among academicians.	Directly adapted
	OP2	I share my knowledge in accordance with the university policy on knowledge sharing	Akosile & Olatokun (2020)	My institution provides clear guidelines regarding knowledge sharing activities.	Directly adapted
	OP3	I consider that my institution provides its members with a fair evaluation/reward system for sharing knowledge	Chedid et al. (2019)	My institution has a fair system for recognizing and rewarding knowledge sharing activities.	Directly adapted
	OP4	NA	Study-developed	My institution has policies that protect academicians when sharing knowledge and research outputs.	Study-developed
Trust	TRU1	Most of my colleagues are trustworthy enough to share my knowledge with.	Akosile & Olatokun (2020)	I believe most of my academic colleagues are trustworthy enough to share my knowledge with.	Directly adapted
	TRU2	I believe my colleagues will not take advantage of my knowledge for personal gains or take undue credit	Akosile & Olatokun (2020)	I am confident that my colleagues will not misuse or take undue credit for the knowledge I share.	Directly adapted
	TRU3	have reciprocal faith in other members' behaviours	Phung & Chandran (2019)	In my academic environment, there is a strong sense of reciprocal trust when sharing knowledge.	Directly adapted
	TRU4	I believe that by sharing knowledge with my colleagues in my institution, they will respond in the same way	Chedid et al. (2019)	I trust that when I share my knowledge, my colleagues will respond in a supportive and reciprocal manner.	Directly adapted
	TRU5	I can trust the people I work with to lend me a hand if I needed it.	Jolaee (2014)	I am confident that my colleagues will provide help and share their knowledge when I need it.	Directly adapted
Digital Literacy	DL1	I have the skills to use social media for informal learning.	Balakrishnan (2017), as adapted by Al-Sabaawi (PhD	I have the skills needed to use ASM platforms for knowledge sharing.	Adapted via secondary source

			thesis)		
	DL2	I have the confidence in using social media for informal learning.	Balakrishnan (2017), as adapted by Al-Sabaawi (PhD thesis)	I am confident in my ability to use academic social media platforms effectively.	Adapted via secondary source
	DL3	I have enough knowledge/experience to use social media for informal learning.	Balakrishnan (2017), as adapted by Al-Sabaawi (PhD thesis)	I can effectively use ASM platforms to create and share academic content.	Adapted via secondary source
	DL4	It is easy to find people with common interests on social media.	Al-Sabaawi (PhD thesis)	I can easily use the features of ASM platforms to communicate and interact with other academicians.	Directly adapted
Academic Collaboration	AC1	I use social media to discuss my research method with other academic researchers.	Al-Sabaawi (2021)	I use ASM platforms to discuss academic matters with other academicians.	Directly adapted
	AC2	I use social media to discuss my research finding with other academic researchers.	Al-Sabaawi (2021)	I use ASM platforms to exchange ideas and receive feedback on academic matters, including teaching, research, student supervision, and project consultation.	Directly adapted
	AC3	I use social media to facilitate collaboration with my academic research partner.	Al-Sabaawi (2021)	I use ASM platforms to coordinate and collaborate on academic activities, including research, teaching, consultation, academic administration, and supervision.	Directly adapted
	AC4	I use social media to facilitate collaboration with my academic research respondents to collect the required data.	Al-Sabaawi (2021)	I use ASM platforms to identify and connect with potential collaborators for academic activities and opportunities.	Directly adapted
Technology Readiness	TR1	I feel confident that technology-based systems will follow through with what I instruct them to do.	Parasuraman & Colby (2014)	I have a positive attitude toward using new academic social media technologies.	Directly adapted
	TR2	Products and services that use the newest technologies are much more convenient to	Parasuraman & Colby (2014)	Academic social media platforms provide convenient ways to engage in academic	Directly adapted

		use.		activities.	
	TR3	I enjoy the challenge of figuring out high-tech gadgets.	Parasuraman & Colby (2014)	I enjoy exploring new academic social media technologies for scholarly engagement.	Directly adapted
	TR4	I keep up with the latest technological developments in my areas of interest.	Parasuraman & Colby (2014)	I keep up with developments in academic social media and online scholarly communication platforms.	Directly adapted
	TR5	I can usually figure out new high-tech products and services without help from others.	Parasuraman & Colby (2014)	I feel confident using new features and tools on academic social media platforms.	Directly adapted
Facilitating Condition	FC1	The availability of WiFi enables me to use social media for informal learning easily.	Balakrishnan (2017), as adapted by Al-Sabaawi (PhD thesis)	I have reliable internet connectivity to access ASM platforms.	Adapted via secondary source
	FC2	I have the time to use social media for informal learning in my research activity.	Shin & Fang (2004), as adapted by Al-Sabaawi (PhD thesis)	I have sufficient time to use ASM platforms for knowledge sharing.	Adapted via secondary source
	FC3	My organization provide me with the needed knowledge to use the social media for informal learning.	Venkatesh et al. (2003) and Brown et al. (2010), as adapted by Al-Sabaawi (PhD thesis)	I have access to the necessary hardware and software to use ASM platforms.	Adapted via secondary source
	FC4	Assistance to use social media for informal learning is available at my institution.	Venkatesh et al. (2003) and Brown et al. (2010), as adapted by Al-Sabaawi (PhD thesis)	Technical support is available when I encounter problems using ASM platforms.	Adapted via secondary source
	FC5	NA	Study-developed based on expert recommendation	I find the cost of using ASM outside office hours and beyond my institution's Wi-Fi network affordable.	Study-developed
Perceived Usefulness	PU1	Overall, I find the electronic mail system useful in my job.	Davis (1989)	Using ASM platform is useful for my academic work.	Directly adapted
	PU2	Using electronic mail makes it easier to do my job.	Davis (1989)	Using ASM platforms makes it easier to share academic knowledge.	Directly adapted

	PU3	Using electronic mail increases my productivity.	Davis (1989)	Using ASM platforms increases my productivity in academic activities.	Directly adapted
	PU4	Using electronic mail enhances my effectiveness on the job.	Davis (1989)	Using ASM platforms improves the effectiveness of my scholarly communication.	Directly adapted
	PU5	Using electronic mail improves my job performance.	Davis (1989)	Using ASM platforms enhances my performance in academic work.	Directly adapted
Knowledge Sharing	KS1	Submit documents and reports.	Ramayah et al. (2014)	I share academic documents and research materials through academic social media platforms.	Directly adapted
	KS2	I publish articles in university journals, magazines, or newsletters.	Ramayah et al. (2014)	I share my published articles or pre-prints on academic social media platforms.	Directly adapted
	KS3	Contribute ideas and thoughts to department online databases.	Ramayah et al. (2014)	I share ideas and insights through discussions on academic social media platforms.	Directly adapted
	KS4	Answer questions of others in team meetings.	Ramayah et al. (2014)	I use academic social media platforms to exchange questions, answers, and ideas with other scholars.	Directly adapted
	KS5	Share experiences that may help others avoid risks and trouble through personal conversation.	Ramayah et al. (2014)	I share my academic experiences and lessons learned with other scholars through academic social media platforms.	Directly adapted