https://doi.org/10.56279/orseaj.v15i1.6

Uplifting the plight of Smallholder Farmers in Uganda: The Interplay between Information Seeking Behaviour and Information Literacy

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Abstract

The study aimed at exploring the linkage between information seeking behaviour and information literacy of smallholder farmers in Uganda. Anchored on the Personal Construct Theory and the Situated Learning Theory, two variables, that is information seeking behaviour and tool adoption were used to explain information literacy. Data was collected from 225 smallholder farmers located in central Uganda at a single point in time using a structured questionnaire. To assess the different hypotheses, we run a structural equation model using SPSS. Results showed that the behaviour of smallholder farmers while seeking information influences its use. The study established that information seeking behaviour and Tool adoption were not related. Yet still it was established that tool adoption significantly impacted on usage of information. Lastly the mediating effect of tool adoption in the relationship between information seeking behaviour and information literacy was non-significant. These findings have practical implications for Policy makers and Extension workers on how to improve information literacy but also advance information literacy theoretical explanations by incorporating two theories.

Key Words: Information Literacy, Information seeking behaviour, tool adoption, smallholder farmers

Introduction

Information is a vital component of life, particularly when transformed into knowledge that aids in decision-making, problem-solving, and enhancing quality of life (Jordão, 2022; Reddy et al., 2022). Human beings need information evaluation skills to enable them to make meaning and to transform facts into knowledge for decision making (Lunkuse et al., 2024). These skills reduce uncertainty and support informed decision making. Various definitions of information literacy have been proposed (American Library Association, 2000; UNESCO, 2013), but for the purposes of our study, we define it as the ability to use information effectively to meet one's information needs (Kurbanoglu et al., 2014) Given its significance in society, information literacy has received considerable research attention, primarily in academic, workplace, and health-related contexts. Most studies have focused on formal settings and employed skill-based models/frameworks, with a predominant emphasis on developed countries (Hicks et al., 2022; Ojaperv, 2023; Sharif & Naghavi, 2020; Marsh, 2022; Eze & Aduba, 2022). Whereas previous researchers have provided fundamental explanations in the field of information literacy, their focus was on developed countries and mainly in the formal sectors, which may not fully be applicable in a country like

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Uganda. This gap hinders our understanding of how smallholder farmers' information-seeking behaviors interact with tools such as technology, language, and information culture to enhance information literacy (Lunkuse et al., 2024). To address this gap, we employ a sociocultural perspective and a multi-theoretical approach to explore how farmers derive meaning from their interactions and situated processes, and how these mediate their information-seeking behaviors and overall information literacy. Our study incorporates the Personal Construct Theory (PCT) (Kelly, 1955) and the Situated Learning Theory (SLT) (Lave & Wenger, 1991). We adopt this multi-theoretical framework because the dynamic nature of lived experiences of smallholder farmers (SHFs) cannot be fully captured by a single theory (Hoque et al., 2013).

Smallholder farmers contribute significantly to the country's agricultural production (Uganda Bureau of Statistics, 2022). The study focused on maize because it is the most widely consumed staple food in urban areas and majority of SHFS depend on it for their livelihood (Uganda Bureau of Statistics, 2014). However, their productivity remains below the targeted growth rate of 6.0%, indicating underperformance relative to the country's agricultural potential (Atube et al., 2021). Despite the sector's critical importance to the economy, there is limited evidence regarding the interplay between information-seeking behaviour, tool adoption, and information literacy among SHFs, even though literature suggests a positive relationship between information literacy and productivity. Given this scenario, we investigate the role of information-seeking behaviour and tools in enhancing the information literacy levels of smallholder farmers (SHFs) in Uganda. Our justification for this research is rooted in three key contributions; This study widens the information literacy debate by introducing a multi-theoretical approach that combines two theories, that is PCT and SLT. To our knowledge, no previous research has utilized these theories together to explore information literacy within the context of smallholder farmers in a developing country like Uganda, offering novel insights into the field. In terms of practice, Policy makers and extension workers need to focus on interventions that enhance farmers' search abilities, confidence, and motivation as well as setting up tailor made trainings for the farmers. Additionally, attention should be given to integrating localized tools such as local radio stations and mobile phones and ensuring that simple and user-friendly language is used in relaying agricultural information. The recommendations have significant implications for Operations Research Discipline by providing hints that may aid in the design of Agricultural decision supports systems. The proceeding section reviews existing literature and proposed hypotheses.

Information Seeking Behaviour and Information Literacy

Information seeking behaviour which denotes the purposive searching of information is a fundamental human process for lifelong learning and problem-solving (Wilson, 2000). It may happen consciously or unconsciously by the way people search for, interact with, feel about, and utilize information (Nowfal, 2022). PCT suggests that our behaviour is shaped by personal constructs influenced by our experiences, values, beliefs, and the meanings we attribute to different events. Consequently, information-seeking behaviour encompasses the methods and strategies used to locate information, along with the processes involved in assessing the reliability of these sources. Individuals interpret their experiences through unique mental frameworks, or constructs, shaped by past experiences and beliefs which help them anticipate events and influence their motivation to seek information (Cole, 2013). This theory significantly influences how individuals determine what information is relevant or credible. It explains how farmers assess risky situations by evaluating threats which inform their decisions under uncertainty. For

example, a farmer may prioritize agricultural resources that resonate with their prior experiences or cultural beliefs, leading to selective information-seeking behaviours. Information seekers assess the credibility of various information sources. Overall, farmers tend to adopt specific strategies based on their constructs, focusing on practical and contextually relevant information that aligns with their lived experiences. This highlights the importance of understanding personal constructs in facilitating effective information-seeking behaviours among farmers.

As individuals seek out information, they become more aware of various sources and their reliability, enhancing their ability to recognize the need for quality information. It is seen as the user's constructive activity of finding meaning from information to extend his or her state of knowledge (Kuhlthau,1991). In so doing, these individuals use their mental capabilities to make meaning out of such information. However, having the behavioural abilities to find this information is crucial. Studies have shown that self-efficacy and academic motivation improve information literacy for Students in Tertiary Institutions which leads to academic success (Pinto & Sales, 2010; Chow & Wong, 2020). Sharif and Naghavi (2020) studied financial information seeking behaviour of youths. Another study concluded that information-seeking behaviour is positively associated with nursing students' ability to utilize, retrieve and assess information (Zhong et al., 2018). Relatedly, there is a view that being intellectually curios and possessing personal interest motivates individuals to seek information which promotes learning. (Schumacher et al, 2025). These studies seem to agree that when one identifies a need for information and adopts an appropriate seeking behaviour to obtain information through various channels and this information is well fitted with the information need, then chances are high that the person will become information literate (Gordon et al, 2022). Boon et al. (2007) also point out that one step towards becoming information literate is having a behavior that encourages seeking of information. Considering the discussion above, we put forward an argument that there is a relationship between the information seeking behaviour of an individual and Information Literacy.

H1: Information seeking behaviour positively influences Information literacy.

Information Seeking Behaviour and Tool Adoption

Tool adoption refers to the decision by an individual or group to use a specific tool that has been enacted in a particular practice **(**Eze & Aduba, , 2022). However, specific patterns of information seeking behaviour relate to the adoption of specific tools that resonate with the community. According to the SLT, such tools may include technologies, and objects that are indispensable in the smooth running of any practice. It has been observed that individuals may face challenges like language, cultural differences, and digital divide in their search for information (Wang et al., 2020). Lunkuse et al., (2024) pointed out that tools such technology and language that have been assumed by a culture affect information acquisition and how people think. More so, behaviour of learners while searching for information has emerged out of the affordances of mobile technology (Bowler et al.,2018). In the agricultural sector the use of technology for information seeking has become prominent (Mahindarathne & Min, 2018). Hoque et al (2021) in their research reported that majority of farmers were using technology for getting agricultural marketing information. In the same vein, (Kante et al., 2018) testified that when technology is utilized, chances are high that farm input information use by SHFs in developing countries will be increased. Apart from technology, Information behaviour is affected by other tools like culture and language which are

entwined in different societies. For instance, it has been reported that effective access and use of resources of the academic library depends on student's understanding of the language of information literacy (Schaub et al.,2017). Because communication is part of our daily life, language is critical in expressing what we air out, what we jot down and what we read. Hart et al. (2021) further revealed that terminologies and jargons used in information sources may hinder meaning creation for individuals who are not acquainted with some of the words used. It is therefore necessary that when framing any information to be communicated, intended meanings should be very specific.

Information culture has been regarded as one of those tools that influence information behaviour. For example, (Sotnikova et al. ,2021) found that cultural and social values affect ways in which people choose to respond to information. The values entrenched in information and the mentality towards it are believed to be pointers of information culture in organizational settings (Widén & Karim, 2018). In the same vein, culture shapes the meaning of people's behaviour and determines who is considered an information agent. Some studies have attested to the fact students may be challenged by environmental and cultural issues when making choices on how to look for information (Slagle et al., 2015**).** Therefore, based on the literature we hypothesize a relationship between information seeking behaviour and tool adoption.

H2 Information seeking behaviour positively influences Tool Adoption.

Tool adoption and Information Literacy

The way in which individuals experience information is dependent on the context and the different tools of practice (Lloyd, 2012). Collectiveness of knowledge creation is facilitated by the dynamic nature of interaction, which is sanctioned through language, culture, norms and technology (Hennink, 2008). It is through such tools that cognitive authority can be scrutinized, which is an underlying principle of information literacy. Language, culture and technology are important for information Literacy to develop (Appleton et al., 2017). For instance, Nikou and Aavakare (2021) Reported that information literacy was related to digital technology. Further still, (Ali & Ahmed, 2021) in their study of Information Literacy Skills among Library and Information Science Professionals, confirmed that there was a significant relationship between Information Literacy Technology skills and use of information. According to them, offering digital resources to researchers is more focal than purchasing, storing and preserving physically published materials, implying online tools are very crucial for sharing and aiding the use of research materials. Information culture as part of the community culture focuses on awareness of the value of information and the ability to work with it (Turgunov,2022). It entails socially shared patterns of behaviour, norms, and values that define the significance and use of information within an organization. It influences the development of workplace information literacy (Widén & Karim, 2017). According to López Gándara et al, (2021) content selection for literacy development must consider the learners' interests, culture, background and experiences. This implies that the use of texts with a language that appeals to information users' everyday experiences and practices in which these users have engaged previously and are interested in, are more likely to promote literacy. This has been supported by the Situated Learning Theory (Lave & Wenger, 1991) which supports the use of tools in mediating the interaction between an individual and their goal, in this case use of information. In view of the above we postulate that tool adoption has a relationship with information literacy.

H3: There is a relationship between Tool Adoption and Information Literacy

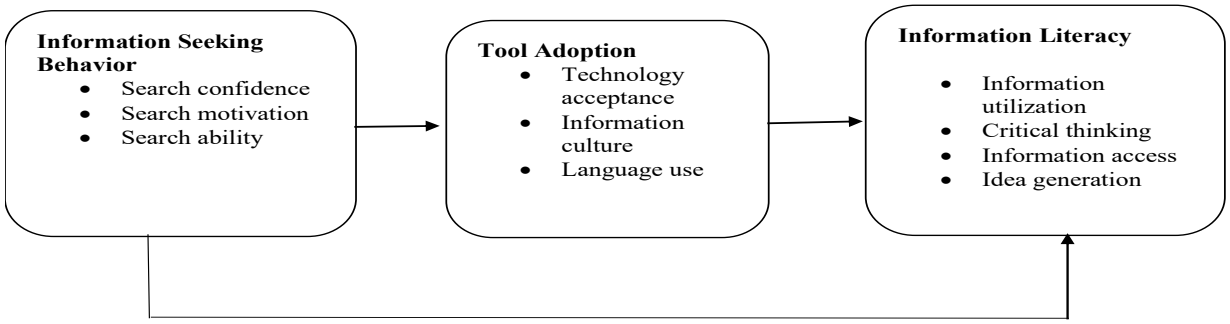
Mediation effect of Tool Adoption in the relationship between Information seeking behaviour and Information Literacy

Participation in community practice and its activities requires individuals to adopt specific tools that are central in that practice (Egorova, 2015). However, this decision is mainly based on the attitude one has towards using that tool, for instance technology, where context and situations play a big role in controlling this decision (Ali et al., 2020; Yang; Gani et al., 2022; Liu and Wang, 2022; Nyagango, Sife and Kazungu, 2023; Silva et al., 2023). Promotion of ICTs at the very basic level of using mobile phones is inevitable in overcoming challenges that farmers experience, none the less willingness to accept and adopt is crucial. Language as a tool is actively utilized to interact and communicate thoughts, ideas, concepts, or even feelings with the intention of achieving certain objectives. (Coyle, 2015). Because the intended meaning of any communication can only be determined with reference to a certain context, context is vital in language use. (Shabaka-Fernández, 2021). Furthermore, Information culture which pertains to attitudes, values and norms through which individuals participate in an information environment is crucial because it has an impact on how information is viewed, generated, and distributed (Lauri, Virkus and Heidmets, 2020). According to Kolmykova (2021) Information Culture creates favourable conditions for collaborative learning and standardization of knowledge as a prerequisite for information use. From this understanding, it is proposed that tool adoption mediates the relationship between information seeking behaviour and information literacy.

H4 Tool adoption mediates the influence of information seeking behaviour on information literacy.

The hypotheses outlined above serve as the foundation for the conceptual framework illustrated in Figure 1 below, indicating the conceptual relationship between information seeking behaviour, tool adoption and information literacy

Figure 1
Conceptual Framework



Source: Researcher's conceptualization from Literature and Theoretical Review (Kelly ,1955; Fransella 2005; Lave & Wenger, 1991)

Research Design, Study population and Sampling

The study was quantitative and cross sectional in nature. A structured questionnaire was used to collect data on the variables of study. (Trivedi and Srivastava, 2022; Maier et al., 2023). The population comprised of smallholder farmers engaged in maize growing in central Uganda. The study focused on Wakiso District because it ranks higher than other districts in growing maize. (Uganda Bureau of Statistics, 2011). To derive our sample, a stratified sampling technique was used. This entailed diving the district into geographical strata as a means of assuring full representation. The respondents were chosen purposively due to the failure to attain a list of smallholder farmers(Sham et al.,2023). This was done with the help of village leaders. Only SHFs that grew maize and owned land size between 1-3 acreage were considered (Ministry of Agriculture, Animal Industry and Fisheries, 2013). The items were adapted from previous studies but tailored to meet the farmer's context. Using a six-point Likert scale with mixed anchors helped the research to reduce the effects of social desirability in responding and common methods bias (Robinson, 2017). For example, some items had self-rating anchors, frequency anchors while others had truth scales.

Factor Analysis, Validity and Reliability

Prior to data collection, content validity was done to establish if the study items were precisely and exhaustively representing all the aspects of our domain of study (De Moraes et al,2022). Expert opinions were sought from some practitioners in practice and those in academia to confirm the content of the questionnaire. The study variables had a content validity index (CVI) of above the recommended rule of thumb of 0.70 (Yusoff, 2019). To test if our data was fit for factor analysis, we used the Kaiser-Meyer-Olkin (KMO) for sample adequacy and Bartlett's test. Results confirmed that our data was fit for factor analysis as it showed that there was sufficient intercorrelations leading to reliable factors. These were tested to ensure that factor analysis provides distinct and reliable factors. (Field, 2009). To assess the strength of the psychometric properties of the study measures, reliability was tested using Cronbach's alpha coefficient. The coefficients were all above 0.7. Convergent validity was done to measure the extent to which items converge to measure a construct and those factors with loadings above 0.5 were deemed suitable (Field, 2017). Using the Rotated Component Matrix, discriminant validity was done to confirm that items do not correlate with others measuring different constructs. This is illustrated in Tables 1, 2 and 3 indicating the Rotated component matrices for information literacy, information seeking behavior and tool adoption respectively.

Table 1: ***Rotated Component Matrix for information literacy***

Item Code	Info Utilisation	Critical Thinking	Information Access	Idea Generation	Communalities
IU5	0.887				0.891
IU4	0.852				0.847
IU10	0.811				0.748
IU6	0.776				0.734
IU9	0.766				0.721
IU7	0.755				0.576
IU8	0.749				0.617
IU13	0.676				0.622
CT15		0.854			0.737

CT12		0.851			0.746
CT14		0.82			0.681
CT10		0.815			0.743
CT11		0.791			0.66
A5			0.883		0.796
A3			0.867		0.772
A4			0.802		0.728
A2			0.692		0.642
ID8				0.79	0.684
ID9				0.814	0.697
ID1				0.811	0.693
Total	8.229	4.342	1.762	1.696	
% of Variance	41.146	21.711	8.812	7.598	
Cumulative %	41.146	62.858	71.67	79.268	

Extraction Method: Principal Component Analysis
Rotation Method: Varimax with Kaiser Normalization.
Rotation converged in 5 iterations.

Table 2: ***Rotated Component Matrix for information seeking behaviour***

Item Code	Search Motivation	Search Confidence	Search ability
SM2	.939		
SM3	.835		
SM4	.796		
SC9		.815	
SC5		.789	
SC4		.786	
SA4		.782	
SA3			.871
SA5			.851
SA1			.846
Total	7.366	1.648	1.186
% of Variance	66.959	14.984	8.017
Cumulative %	66.959	81.943	89.960

Extraction Method: Principal Component Analysis
Rotation Method: Varimax with Kaiser Normalization.
Rotation converged in 5 iterations.

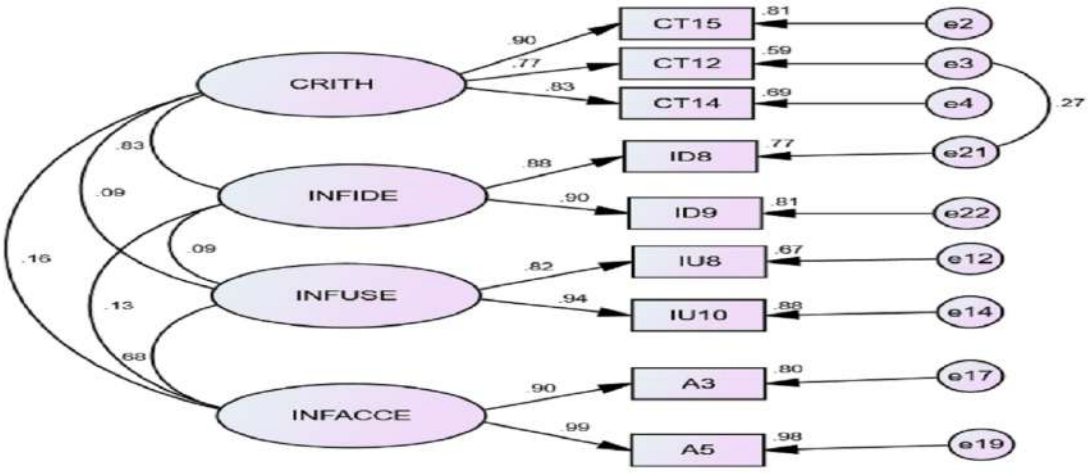
Table 3: ***Rotated Component Matrix for Tool Adoption***

Item Codes	Technology Acceptance	Language Use	Information Culture	Communalities
	0.938			0.927
IA13	0.928			0.899
IA10	0.926			0.938
IA11	0.899			0.904
IA8	0.877			0.874
LU3		0.894		0.859
LU2		0.816		0.758
LU4		0.807		0.753
LU1		0.763		0.807
IC2			0.962	0.942
IC1			0.961	0.943
IC3			0.925	0.903
Total	6.409	2.739	1.363	
% of Variance	53.407	22.821	11.358	
Cumulative %	53.407	76.228	87.585	

Extraction Method: Principal Component Analysis
Rotation Method: Varimax with Kaiser Normalization.
Rotation converged in 5 iterations.

Measurement models

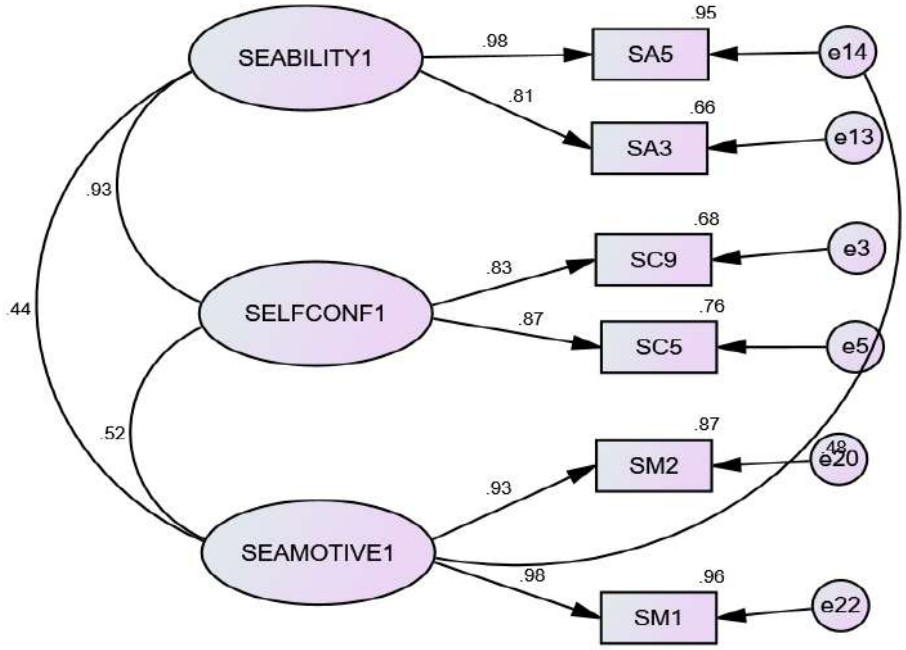
To establish if the data fits the measurement model, the study used fit indices to confirm their fitness and feasibility (Hair et al., 2014). The results show that the model provided a good fit as indicated by the fit indices following recommendations of Kline (2015). Figures 2,3 and 4, indicate the measurement models for information literacy, information seeking behaviour and tool adoption respectively. Based on this, we proceeded to test the four hypotheses.



CMIN = 21.737; DF =20; P= .355; CMIN/DF = 1.087; GFI = .978; AGFI = .951;

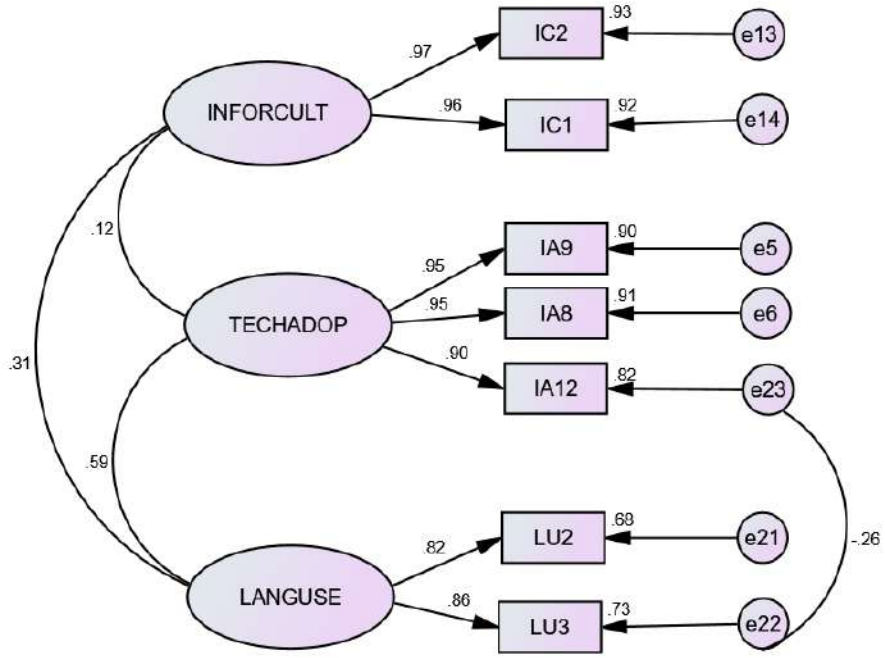
NFI = .984; RFI = .971; IFI = 999; TLI = .998; CFI = .999.
RMSEA = .020; PLCOSE = .831

Figure 2: ***Structural model for Information Literacy***



CMIN = 32.497; DF = 23; P= .090; CMIN/DF = 1.413; GFI = .968; AGFI = .936;
NFI = .985; RFI = .976; IFI = 996; TLI = .993; CFI = .996;
RMSEA = .045; PLCOSE = .566

Figure 3: ***Structure Model for information Seeking Behaviour***



CMIN = 9.153; DF = 10; P= .518; CMIN/DF = .915; GFI = .988; AGFI = .966;

NFI = .993; RFI = .985; IFI = 1.001; TLI = 1.001; CFI = 1.000;
RMSEA = .000; PLCOSE = .830

Figure 4: ***Structure model for tool adoption***

Data Management and Analysis

Data was analysed using SPPS Version 26 because it provides an efficient and organized way to manage large and complex data sets and perform advanced statistical analysis (Dash and Paul, 2021). Descriptive analysis was conducted to establish the background characteristics and profiles of the farmers (Trivedi and Srivastava, 2022). Correlation analysis was done to establish the nature of relationships that existed among the variables.

Findings

Demographic Characteristics

The sample demographic characteristics in Table 4 indicated that the majority (49.5%) had a primary leaving education qualification, followed by high school (28.4%) and those with no formal education followed with (14.9%). More still, 60.6% were male and the female were 39.4%. Furthermore 38.9% of the respondents were aged between 41 and 50 years followed by those under 30 years constituting 16.3%. In general terms, the profiles of the sample respondents show representativeness, which is crucial for generalizations**.**

Table 4: ***Demographic Characteristics***

Variable	Profile	Frequency	Percent
Age	Below 30 years	34	16.3
	30-40 years	50	24
	41-50 years	81	38.9
	51-60 years	31	14.9
	Above 60 years	12	5.8
	Total	**208**	**100**
Gender	Male	126	60.6
	Female	82	39.4
	Total	**208**	**100**
Education Level	Primary Level	103	49.5
	High School Level	59	28.4
	Tertiary Level	9	4.3
	University	6	2.9
	None	31	14.9
	Total	**208**	**100**
Farming Experience	Less than 10 years	51	24.5
	10-20 years	60	28.8
	Above 20 Years	97	46.6
	Total	**208**	**100**

Source: *Analysis of Quantitative data*

Descriptive Statistics

The vital features of our observed data were established by calculating means and standard deviations as recommended by Field (2017). These are presented in Table 5. The mean scores for information seeking behaviour (3.117), tool adoption (2.897) and information literacy (2.643), which were anchored on a six-point likert scales are indicative of the fact that SHFs fairly use or exhibited information literacy in their practice.

Table 5: ***Descriptive statistics and Pearson correlations***

Study Variables	Mean	Std. Deviation	1	2	3
Information Search Behaviour (1)	3.117	1.247	1		
Tool Adoption (2)	2.897	1.021	.265**	1	
Information Literacy (3)	2.643	1.080	.589**	.432**	1

**. Correlation is significant at the 0.01 level (2-tailed).

Correlation analysis and Hypothesis Testing

The results of the correlation analysis are indicated in Table 5, indicate that information seeking behaviour and information literacy are positively related ($r = 0.589$, $p < 0.01$). Moreover, the results also suggest that Information seeking behaviour and Tool adoption are positively related ($r = 0.265$, $p < 0.01$). The correlation analysis further shows that there is a positive relation between tool adoption and information literacy ($r = 0.432$, $p < 0.01$). Additionally, results in Table 6 indicate a positive and significant relationship between information seeking behaviour and Information literacy ($\beta = .263$, p-value=.003). The findings imply that a positive change in information seeking behaviour is associated with a positive change in information literacy. This hypothesis was supported. The results indicate that the relationship between Information seeking behaviour and Tool adoption is not significant ($\beta = .112$, p-value=.342). Thus, the hypothesis was not supported. This shows that a positive change in information seeking behaviour is not necessarily associated with a positive change in tool adoption. Hypothesis 3 tested the relationship between tool adoption and information literacy, and this was significant and thus supported ($\beta = 0.167$, $p = 0.006$). The results on the mediating effect of tool adoption in the relationship between information seeking behaviour and information literacy (Hypothesis 4) revealed a non-significant relationship ($\beta = .0.019$, $p = .0.345$). This hypothesis was not supported. This means that there was no mediation because only the direct effect between information seeking behaviour and information literacy was significant but not the indirect one through tool adoption.

Table 6: ***Results for direct and indirect relationships***

Direct Path	**B**	**S.E**	**C.R**	**P**	**BCI**	**Decision**
H1: ISB ⟶ IL	0.263	0.083	3.169	0.003	.098 – 418	Supported
H2: ISB ⟶ TA	0.112	0.114	-.982	0.342	.-331-113	Not Supported
H3: IL ⟶ TA	0.167	0.06	2.783	0.006	.043 – 281	Supported
Indirect Path						
H4: ISB ⟶ TA ⟶ IL	-0.019	0.022	-0.864	0.345	-.068 - .020	Not Supported

Discussion of Findings

In our study context, information seeking behaviour plays a pivotal role in enhancing information literacy among SHFs, supporting Hypothesis 1. When smallholder farmers are enthusiastic and skilled at seeking out information, they are more likely to access and evaluate information, which enables them to make well-informed decisions in their farming practices. Curiosity and competence in information verification enhances the farmers' ability to discern credible sources of information, which helps them to make choices based on reliable data. Albeit in a different context, this aligns with previous research by Stokes et al. (2021), which found a correlation between the information-seeking behaviour profiles of nursing students and their information literacy practices. Similarly, Tachie-Donkor and Ezema (2023) established that information-seeking behaviour strongly influences students' lifelong learning. This emphasizes the importance of farmers' inquisitiveness as a key driver of learning and exploration of latest ideas and practices, leading to data driven decisions that improve productivity and sustainability in their operations.

The findings further established a non-significant relationship between information seeking behaviour and tool adoption. Farmers who are confident in their information-seeking abilities may not feel the need to adopt available technologies for information acquisition. Similarly, those who believe in their capacity to select the most relevant information might disregard the values and norms associated with information sharing within their communities. Moreover, farmers who exhibit eagerness to learn may favour peer-to-peer knowledge sharing over formal solutions, especially due to language barriers. This behaviour may reflect issues of bounded rationality whereby farmers optimize their decisions not only based on information availability but due factors like social context. Our findings are contrary to some findings which indicate a positive relationship between information-seeking behaviour and technology acceptance (Shastry, 2018). This could be because of several factors such as technological discomfort and complex language usage. However, this is not very surprising, especially in the context of less developed countries where individuals often experience anxiety when it comes to using technology. Warden et al. (2020) and Pandey et al. (2021) confirmed that discomfort with technology can hinder its adoption and significantly affect actual usage.

The results revealed that tool adoption had an influence on information utilization. This suggests that when farmers employ technologies like mobile phones and receive information in a language that is simple and coherent, they will easily and more frequently access and use farming information necessary for their practice. Similar studies, albeit in a formal setting, established that there was a significant relationship between information literacy and use of digital technology (Aavakare & Nikou, 2020). This could be because the use of technology makes it easy to find, share and evaluate information. More so, our results agree with Gándara et al. (2021) who reported that content and language selection for literacy development is dependent on learners' interests and culture. This shows that it is of significance to use understandable language in agricultural communication, which helps farmers easily understand and apply essential information, reducing misconceptions.

Lastly, regarding the mediating effect of tool adoption in the relationship between information-seeking behaviour and information literacy (Hypothesis 4) revealed a non-significant relationship. This suggests that SHFs who are confident in their ability to find information, can access and utilize resources from various sources without necessarily relying on technology or being

hindered by complex language in agricultural communications. It may also imply that farmers who feel competent in their knowledge to locate information from different sources can access and use it without necessarily following the values, norms and processes for accessing information within the community. This aligns with findings from China, where farmers prioritize social systems and the opinions of influential figures when considering technology and information use (Oreglia, 2013). This could be a case of farmers using heuristics and personal experience to optimize access to information and make choices within their constraints. Conversely, this challenges previous research that indicated social factors had a minimal impact on ICT acceptance (Kamble et al., 2018). Confidence in information seeking skills can help farmers overcome barriers related to ICT and complex language, effectively utilizing knowledge from diverse sources outside traditional community practices, demonstrating flexibility and a willingness to embrace new agricultural approaches. The findings offer alternative views on appreciating human decision making against traditional notion of perfect rationality.

Conclusion

In conclusion, this study explores the correlation between information seeking behaviour, tool adoption and information literacy in smallholder farmers in Uganda. The study addresses earlier gaps from previous studies which used individual cognition models and in western setting and therefore furthers our understanding of information literacy in informal settings in an underdeveloped country like Uganda. Specifically, information seeking behaviour is critical in elevating information literacy levels of smallholder farmers in Uganda. Motivated and competent farmers are better equipped in recognizing credible sources of information thus enhancing better decision making in the farming practice. However, over confidence in their abilities may lead some farmers to bypass useful technology, this calls attention to the importance of addressing technology discomfort to promote adoption. Additionally, utilizing accessible technologies, coupled with clear language in communication, significantly aids farmers in accessing vital information needed for optimal choices. These findings underscore the importance of enhancing farmers' information-seeking conduct, and use of simple language in communication, while also addressing the barriers to technology adoption. Supporting farmers in navigating both traditional and modern information sources can lead to improved agricultural productivity and sustainability.

Theoretical Implications

This study contributes to theory by integrating the Personal Construct Theory (PCT) and the Situated Learning Theory (SLT) to explain how information literacy of small holder farmers develops. The PCT suggests that individual behaviours relating to information search motivation, confidence and ability are key in improving information. The findings support this view by showing that SHFs who are proactive, believe in themselves and are capable are better positioned to seek, evaluate and use the right information to guide their practice. It is now evident that information seeking behaviour and tool adoption leads to information literacy. Interestingly, the results contest traditional views that tools like technology and language act as mediators between information seeking behaviour and information literacy. This suggests that contextual factors are crucial and therefore these tools must be carefully and meaningfully integrated into authentic, collaborative, and reflective learning practices if they are to make meaning.

Practical Implications

In practical terms, extension workers and policymakers should adopt tailored approaches that address the unique needs of farmers, such as delivering training programs in simplified language or local dialects to ensure better understanding and engagement. Additionally, greater emphasis should be placed on leveraging communication networks like local radio stations and mobile phones, which are accessible and widely used by farmers. Encouraging frequent interaction among farmers is also crucial, as social networks play a vital role in sharing and relaying agricultural information. By combining these strategies, information dissemination can become more effective, empowering farmers to make informed decisions and improve their agricultural practices.

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