02 Challenges Affecting Strategic Intelligence in Addressing Food Insecurity in Kenya

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Abstract

Food insecurity has far-reaching global, regional, and national consequences: it fuels conflicts, affects livelihoods, and endangers public health. It is a multidimensional threat amplified by widespread uncertainty arising from climate change, pandemics, and a ballooning population. This has implications for strategic intelligence and national security. Strategic intelligence is the foreknowledge that forearms its consumers, informs decisions, addresses uncertainties, and necessitates early action. It includes early warnings and forecasts. Despite the numerous interventions, the number of food-insecure people has increased globally since 2014. Studies have indicated a disconnect between availability of strategic intelligence and its translation to early action in relation to ensuring food security. This study sought to bridge the gap by examining the challenges facing strategic intelligence in Kenya as far as ensuring a food secure country is concerned. Complexity theory underpinned the research. The study used a mixed-method, descriptive research design and a multi-staged stratified-purposive sampling technique. Primary data was collected through interviews and semi-structured questionnaires augmented with secondary data. Quantitative data was analysed using descriptive statistics, while qualitative data was analysed thematically. The study found that strategic intelligence producers were challenged by inadequate data, uncertain indicators and low uptake of these products. In addition, the consumers of the same face resource constraints, political indifference, bureaucracies, and biases in analysing accessed information. The paper concludes that unique challenges constrain strategic intelligence at production and consumption. It recommends leveraging technology to synchronise relevant data and co-production to bridge the gap.

Keywords: Food insecurity, strategic intelligence, challenges

Introduction

Strategic intelligence (SI) should help avert eventualities and ensure food security by eliciting pre-emptive actions. While the term intelligence lacks a universal definition, scholars agree that it is a mandated organisation, a product, a systematic process and a set of missions (Johnson, 2010; Kent, 1965). SI as a product, informs decisions and plays a critical role in strategy formulation and implementation (McDowell, 2009). This is achieved by providing a big picture that reduces uncertainties of anticipated futures (Miller, 2014), and provides alternate scenarios (Mandel & Barnes, 2014).

Food insecurity refers to deficiency in any of the four food security pillars: food availability, access, utilisation, and stability. It can be defined as the lack of physical, economic and social access to sufficient quantities that meet the safety and dietary needs of all people at all times (FAO, 2003). Despite counter efforts, food insecurity remains a global, regional, national, and human security threat (UNDP, 1994). The role of SI in this context is to address threats by providing its consumers with adequate information on the four pillars of food insecurity within the state and neighbouring countries.

In as much as food security has been prioritised in the United Nations (UN) Sustainable Development Goal (SDG) number 2 (Morton et al., 2017), several challenges including low production, volatile food prices, conflicts (FAO et al., 2021), climate change, pests and diseases (FAO et al., 2023; OCHA, 2022) hamper its achievement. Africa, Latin America and parts of the Asian continents are off-track in achieving this SDG since the number of food insecure people has been rising since 2014 (UN DESA, 2021). In 2021, over 2.3 billion people were food insecure globally (FAO et al., 2022). This rose to 2.4 billion in 2022, with Africa contributing nearly a third. The ensuing situation holds despite numerous global, regional and local efforts to improve the various facets of intelligence with the aim of averting food insecurity.

Scholars agree that SI faces various challenges. These include under-staffing, under-funding, inadequate technological capacity and compatmentalisation of producers, leading to non-maximisation of their potentials (King-Okumu et al., 2019). In addition, SI products in the African Region lack high-resolution data for domestication, not tailored to user needs and suffer financial constraints (Braimoh et al., 2018). Further, there is the predisposition of consumers to utilise SI products due to fear of reputational damage if they act on false information (Choularton & Krishnamurthy, 2019). This study explores the gap between available SI and early action in addressing food insecurity in Kenya by highlighting how often SI producers and consumers face challenges at the strategic level.

Statement of the problem

Kenya still suffers devastating cycles of food insecurity despite interventions. In September 2022 there were 3.5 million chronically food insecure people (IPC, 2022). This rose to about 4.35 million in December 2022 (NDMA, 2022). It implies that interventions such as SI, by various actors hardly translate into early action that will avert food insecurity (Braimoh et al., 2018; Hillier, 2012). In its essence, SI ought to forewarn the consumers to prepare adequately to avert food insecurity. However, there seems to be a disconnect between available SI and early action in tackling food insecurity in Kenya (Mwangi et al., 2022; Wilkinson et al., 2018). This disconnect, indicated through delayed interventions, is not only expensive but also causes deaths, loss of livelihoods, and resource-based conflicts. Above all, it threatens Kenya's national interests. The aim of this paper is therefore to establish the challenges that occasion the gap between available SI and timely interventions, from the lenses of SI producers and consumers.

Objective

This study sought to identify the challenges hindering SI from eliciting early action in addressing food insecurity in Kenya. Specifically, the study sought to identify how often the SI producers and consumers, tasked with ensuring food security in Kenya, at the strategic level, faced the identified challenges.

Significance of the study

The study is concerned with food security which is a vital national interest. It offers insights into the challenges that affect SI producers and consumers and suggests practical recommendations to enhance SI effectiveness in mitigating food insecurity. It also contributes to the academic discourse on food security and SI.

Scope

The research was limited to relevant food security strategic-level government, NGO, and humanitarian organisations respondents based in Nairobi, Kenya in the period 2010-2022 which was marked by significant policies, strategies and food insecurity events.

Literature review

Intelligence has been produced at varying levels that is, strategic, operational and tactical (Phythian & Gill, 2018). Its estimative capacities are strategic, current and basic (Masese, 2020a). Basic intelligence constitutes the known facts about a phenomenon (Masese, 2020a) while current intelligence entails highly perishable updates on an ongoing phenomenon (Roger, 2020) with

projections of less than six months (Masese, 2020b). On the other hand, SI is the applied, futuristic intelligence that combines current and basic intelligence (Pherson & Pherson, 2021a).

SI blends foresight and vision management in the policy decision-making processes (Kuosa, 2014; Pherson & Pherson, 2021b). Food security SI products are prepared by varied actors and various forms including forecasts, early warnings, and foresight (Schmertzing, 2021). However, some of the products are classified, with limited reach, but the majority can be accessed online. To be effective, SI must be delivered in a timely and effective format.

The Global Trends 2025 SI on food security parameters, produced by the United States Intelligence Community, offers a 20 year foresight (Schmertzing, 2021) which indicates a steady population growth, urbanisation, and diversion of agricultural water, all affecting global food security (National Intelligence Council & Office of the Director of National Intelligence, 2008). It is projected that this will result in reduced agricultural productivity, increased resource conflicts, water and energy insecurity. Challenges for such long-term analyses can be tackled by applying technology, understanding the presidential terms and political decision-making process, user needs and timeliness of the information.

The other common SI instrument is the Early Warning System (EWS), which was introduced in Africa after the 1984/85 famine to help relevant actors anticipate and prevent severe food insecurity (Kim & Guha-Sapir, 2012). Since 2002, the African Union has encouraged regional blocks to institutionalise and incentivise their EWS in line with the Continental Early Warning System (CEWS) (Mukarji, 2022). The regional EWS monitors conflicts, food insecurity, and weather disasters. Studies have shown that EWS was able to forecast the 2011 famine. However, the relevant actors took action only when the situation got dire (Hillier, 2012). Although trend analysis, another SI product, indicates that droughts and floods in Africa will increase in severity and frequency (Masih et al., 2014), early actions remain elusive.

In Kenya, some of the SI on food security are prepared and disseminated by local and international actors. To be effective, these warnings should be proactive, well-structured, offering long-term guidance and sufficient time for prompt action (Maxwell et al., 2021). Since the 2010/2011 drought, interventions usually intensify following the declaration of an emergency or publicity from media coverage (Hillier, 2012; Kim & Guha-Sapir, 2012).

The non-state actors, such as Kenya Red Cross Society (KRCS), have embraced the forecast- based financing and anticipatory approaches, to trigger early responses based on observable parameters (Wilkinson et al., 2018). This model was useful in the 2022 KRCS drought response in the ASAL areas. Mwangi et al. (2022) suggest that this model could be mainstreamed within the government for optimal results. Famine Early Warning Systems Network (FEWS NET) primarily serves the United States Agency for International Development (USAID) with early warning information for their planning and intervention prioritisation.

Strategic Intelligence has proved beneficial in the strategy formulation and implementation processes (McDowell, 2009), thus raising the discourse on policies and strategies. It informs decisions, reduces uncertainties to anticipate futures (Miller, 2014), and encourages early action (Kim & Guha-Sapir, 2012). It helps scan the horizon against strategic surprises (Barnea, 2020), paints the bigger picture and provides alternate scenarios (Mandel & Barnes, 2014). It also enables its consumers to understand complex issues, foresee challenges and determine proactive courses of action (Pherson & Pherson, 2021c). It further challenges assumptions and facilitates proactiveness (Maxwell et al., 2021). Further, one of the earliest proponents of SI, Sherman Kent (1965) adds that an SI producer should describe phenomena, give warnings, and clearly estimate the future.

Among the challenges facing SI are under-staffing, under-funding, inadequate technological capacity and compatmentalisation (King-Okumu et al., 2019). SI consumers prefer short-term products which are viewed as more accurate, but this limits the production of long-term forecasts that can facilitate planning (Shilenje & Ogwang, 2015). Interventions are also delayed due to actors' fatigue, bureaucracies, lack of political will and security issues (Downing, 1990). Governments with strong opposition will delay the declaration of food insecurity emergencies for their reputation. This study therefore sought to determine how often these and other challenges affect SI production and consumption at the strategic level.

Theoretical framework

This study was underpinned by Stuart Kauffman's complexity theory that offer a multidisciplinary explanation of food insecurity and SI phenomena concurrently. It is premised on the tenets that systems are non-linear with multiple actors that are self-organising with multiple possible interactions. They are also dynamically emergent thus difficult to predict with certainty. SI and early action have a non-linear relationship with multiple actors whose (in) actions have unpredictable impacts (Spoor & Rothman, 2021) on Kenya's food security. The four food security pillars have numerous self-organising and interacting components and actors.

Participatory SI production approaches augment different expertise in a dynamic system for best results. Although accurate and timely, SI should address food insecurity in Kenya. The systems are emergent and complex to predict (Spoor & Rothman, 2021) and face multiple challenges that are best studied as a whole (Menkveld, 2021). Their dynamism accommodates the ever evolving technology in collecting voluminous data as well as offering useful analysis tools in developing SI products. They are heavily interconnected. For instance, Kenya Meteorological Department (KMD) forecasts are used to prepare other SI products. Also, the Kenya Food Security Steering Group offers a platform which provides a single assessment with inputs from all its members to address the potential conflicts among government and non-government agencies. Food security decision-makers also access different SI products and their (re)actions depend on their biases and historical interactions. Therefore, SI takes into account the interconnected, emergent, self-organising and non-linear nature of food insecurity to prefer solutions.

Methodology

The study adopted a mixed methods approach. This involved triangulation of quantitative and qualitative data for a more in-depth understanding (Giddings & Grant, 2006) of the challenges SI faces when it comes to dealing with food insecurity. This helped exploit the advantages of both strands of data.

The research relied on a multi-staged purposive sampling design. First ten SI consumer and producer agencies within Government and Non-Government agencies were identified from the members of the Kenya Food Security Steering Group (KFSSG) that are actively involved in matters of food security in Kenya. The organisations were then stratified as predominantly SI producers or SI consumers and a target population of 52 participants were identified. Using the Yamane Taro formula (Onwuegbuzie & Collins, 2007), a sample of 46 respondents was drawn and values assigned to the strata according to their weights.

Notably, all the ten SI producer and consumer agencies, including KRCS, FEWS NET, the Ministry of Agriculture and Livestock Development, and the National Drought Management Authority (NDMA) are headquartered in Nairobi County.

A pilot study was conducted on five experts, outside the study sample, to refine the data collection tools and analytical techniques and enhance the validity and reliability of the tool. Data was collected using semi-structured questionnaires and interviews. Quantitative data was analysed through descriptive statistics using IBM-SPSS version 26 while the qualitative data was analysed thematically.

The data was properly secured to prevent unauthorised access. Responses were anonymised for enhanced confidentiality. Informed consent was obtained from participants. Finally, an ethical clearance was obtained from the University Ethics Committee and the National Commission for Science Technology and Innovation (NACOSTI). The study adhered to the security and ethical handling policies including safe storage of collected data, confidentiality of responses, informed consent especially to record interview responses. The study attained a response rate of 69.57%.

Findings and discussion

The study sought to determine the challenges that limit the translation of available SI into early action while addressing food insecurity in Kenya. This was done by examining the challenges that affected the producers and consumers.
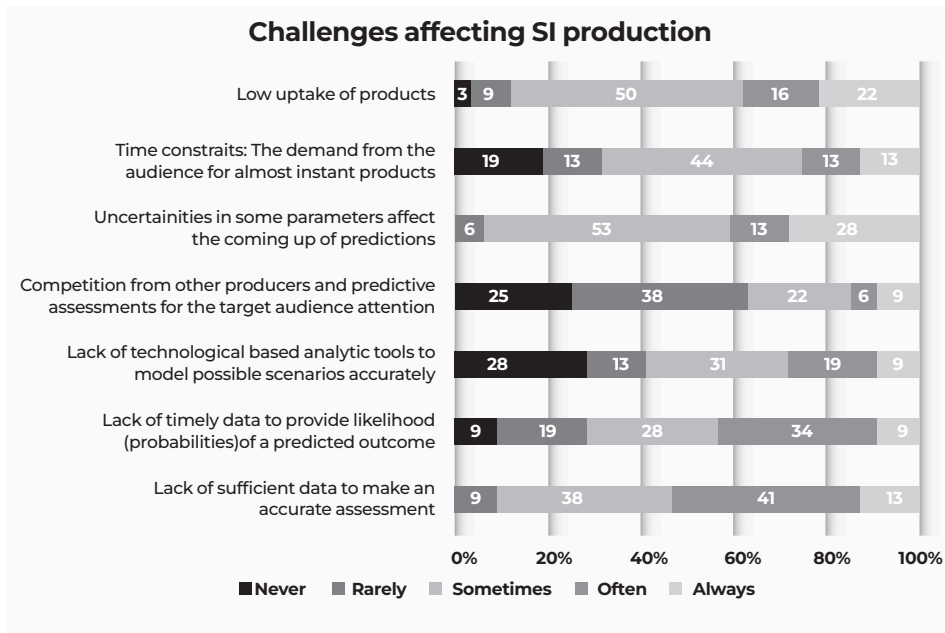
Challenges facing production of SI

Figure 2.1 indicates how often the challenges affected SI producers when preparing the various SI products. The major challenges were data issues (timeliness and sufficiency), uncertainty in observed indicators, and low uptake while the minor were lack of up-to-date technology and competition between agencies.

All respondents asserted that uncertainties made it difficult to make accurate predictions, with 41% indicating that it applied frequently (often-always). Due to uncertainties, SI products are provided in a probabilistic language of likelihood (Roger, 2020; Shilenje & Ogwang, 2015). Sherman Kent (1965) recommends use of percentage chances to increase actionability of SI. Quality data, tools, analytic rigor and experienced analysts are essential in improving the quality of the predictions.

Structured analytical tools also help produce these reports from minimal data (Pherson & Pherson, 2021a). Due to this, complexity theorists advocate for co-production and modelling to increase accuracy (Spoor & Rothman, 2021). Bowell et al. (2021) also advise that consumers access multiple sources to bridge the information gap.

Similarly, all respondents indicated lack of sufficient data while 91% stated that lack of timely data affected the production of SI products. This comprised 79% and 43% who said it applied often and always respectively. Interviews showed that the available data was either insufficient, dis-aggregated, in various formats, lacked accuracy, and was sometimes incomplete, missing, or inaccessible. Scholars opine that lack of proper analytical skills or technological backing limited SI production when data was limited or in excess (Menkveld, 2021). The suggested solution is thus to apply technologies to synchronise the information,

FIGURE 2.1 ◢ **Challenges affecting SI production**

Challenges affecting SI production

Low uptake of products: Never 3, Rarely 9, Sometimes 50, Often 16, Always 22

Time constraits: The demand from the audience for almost instant products: Never 19, Rarely 13, Sometimes 44, Often 13, Always 13

Uncertainities in some parameters affect the coming up of predictions: Never 6, Sometimes 53, Often 13, Always 28

Competition from other producers and predictive assessments for the target audience attention: Never 25, Sometimes 38, Often 22, 6, Always 9

Lack of technological based analytic tools to model possible scenarios accurately: Never 28, Rarely 13, Sometimes 31, Often 19, Always 9

Lack of timely data to provide likelihood (probabilities)of a predicted outcome: Never 9, Rarely 19, Sometimes 28, Often 34, Always 9

Lack of sufficient data to make an accurate assessment: Never 9, Sometimes 38, Often 41, Always 13

■ Never ■ Rarely ■ Sometimes ■ Often ■ Always

model and simulate scenarios optimally. Improving the quality of SI producers through training could also improve the utilisation of limited data (Mandel & Irwin, 2021). Moreover, some producers were not well-resourced and thus could not acquire the relevant data, technologies and staff which agree with the literature (King-Okumu et al., 2019).

Furthermore, 97% of respondents affirmed that low uptake of these products was a challenge, with 38% indicating that it applied frequently. This relates to the path-dependency tenet, as SI consumers will use information based on their previous experiences. The uptake of SI products is affected by institutional challenges and lack of coordination (Mwangi et al., 2022), inadequate funding and technical capacities (Braimoh et al., 2018). Moreover, lack of feedback or interactions between actors limits the effectiveness of SI products.

On the other hand, 81% of respondents asserted that time constraints affected SI products, with 26% affirming it applied frequently. Interviews indicated that this was so whenever SI consumers requested information on short timelines. Relatedly, 75% of the respondents indicated that competition between the producing agencies affected SI production, with 15% stating that it was a frequent challenge. This indicated that the organisations were still operating in silos (Braimoh et al., 2018), although it had improved given that 28% said that it never applied. Competition breeds politicisation, which results in skewing reports to capture the attention of the target. Further, SI consumers access conflicting

information, which emboldens them to choose which information to act upon.

Finally, 72% of the respondents said that lack of technological capacity to prepare products was a problem, with 28% saying it was frequent. The high response variability shows that some agencies had up-to-date technological capacity while others lacked it. Mwangi et al. (2022) posit that lack of sufficient computing, data collection and processing systems were some technological challenges that affected Kenyan EWS. This eventually affects the timeliness and accuracy of the information at the SI producer's disposal.

◪ *Challenges limiting SI consumers from acting*

The frequent challenges that limit the translation of available SI into action range from rarely (applying 25% of the time) to always (100% of the time). The main challenges included lack of resources and political goodwill, bureaucracies, and SI consumers tendency to personally access and analyse information without relying on SI analysts. The least significant problem was consumers' lack of understanding or trust in the SI products. Figure 2.2 indicates the responses captured based on what they felt were the challenges limiting consumers from taking relevant and timely action and how often they applied.

First, all respondents noted that lack of sufficient resources to act was a challenge with 91% of them saying it was a frequent challenge. Braimoh et al. (2018) assert that EWS in East and South Africa also faced this challenge. While resources facilitate the planning and implementation of early action, the interviews revealed that funds were sometimes available but misappropriated, which was linked to corruption. On other occasions, there was delayed disbursement of the funds from the Treasury until an emergency was declared. Barrett et al. (2020) posit that availing funds was paramount to early action because as delayed action was significantly expensive. This explains the move to ring-fence National Drought Emergency Funds (NDEF) resources and mainstream disaster response to improve response rates among actors.

All respondents agreed that lack of political goodwill was a challenge, with 78% saying it was frequent. Politics determines the priorities and allocation of resources for food security. Interviewees averred that food security matters, including investments in SI and responses to severe events, were varied in different administrations. Others said food insecurity was a political problem marred with poor planning and systems. However, it was evident that the political class could also have divergent interests.

All respondents said that SI consumers were analysts who rejected information that contradicted their beliefs, with 69% saying it was a frequent challenge.

FIGURE 2.2 ◢ **Challenges limiting consumer action**

Challenges limiting consumer action

Consumers are super-analysts who use their biases to inform their judgement and actions on the SI products received (Marrin, 2017). Their conceptualisation of the likelihood of occurrences affects their perceptions, prioritisation and how they make these judgments and policy pronouncements (Shapira, 2020). SI should therefore be customised on food security to suit their information needs and guarantee early action (Zeituna, 2019).

The majority (97%) of respondents said that some actors waited for the declaration of emergency before acting, with 35% saying it was a frequent challenge. Data collected from the interviews also agreed with existing literature that both NGOs and the government waited for this declaration or media publicity to roll out actions or access funding (Kim & Guha-Sapir, 2012). This means that actions come a little too late and are more costly (Hillier, 2012). Some also argued that delaying intervention until the declaration of emergencies allowed for less stringent tendering processes, thereby facilitating corruption.

The Inter-governmental Reports Technical Committee (IGRTC) Report attempts to cure this by allocating roles and responsibilities to various actors at different government levels. It offers guidelines on when the declarations should be made and who should intervene. The national government undertakes to necessitate international assistance when overwhelmed by the situation, while the county governments do so to warrant national government interventions. The respective government-level steering groups have devised mechanisms for early action facilitated by NDMA.

Majority of the respondents (94%) said insufficient time to act was a challenge, with 38% saying it applied frequently. Similarly, another 94% of respondents said that bureaucracies delayed action, with 78% saying it was a frequent challenge. Interviewees added that the preference for short-term products, perceived as more accurate, offered a comparatively shorter lead time. This is because governments operate under specific procedures and bureaucracies that are time-consuming. Waiting until the situation is declared an emergency provides insufficient time to plan and act.

Further findings were that, 94% of respondents indicated that SI products had conflicting information, which confused consumers, with 41% saying it applied frequently. Similarly, 72% of the respondents affirmed that lack of trust in these products was a challenge. However, only 9% indicated that it applied frequently. Accessing conflicting information impairs the genuineness, actionability and trust of the products. This was evident during the 2022 drought, whereby different actors showed different numbers of those affected, raising concerns among SI consumers. Recently, when the government was reporting on the expected maize harvests, different agencies reported different figures of the expected output, thus raising concerns on which reports should be utilised or trusted.

Finally, lack of convincing information on the severity of the situation was a challenge to 87% of the respondents, with 32% saying it applied frequently. The interviewees attributed this to the use of probabilistic language in the products that affected the visualisation of the situation. Using technical language was only a challenge to 59% of respondents. Based on interviews, this was not a big issue because the products were written in simple language and technical words were always explained. In the event of technical language reports, technical people who understood the reports received them.

Conclusion

This study has emphasised the importance of SI in forewarning the SI consumers. It has also shown that SI indeed exists though it suffers some challenges that once addressed will increase their effectiveness in mitigating food insecurity in Kenya. It can therefore be concluded that SI producers have increased the variety of SI products, which have also improved in quality over time. Although they are availed chiefly on time, they do not forearm SI consumers to translate to early action due to some identified but surmountable challenges. SI producers are frequently limited by uncertainties in making predictions, data concerns, low uptake and time constraints. On the other hand, SI consumers are limited from acting due to resource constraints, lack of political goodwill, their biases in assessing received reports, access to contradictory information, bureaucracies and inertia as authorities wait for a declaration of emergency to act. However, some of the highlighted challenges can be addressed to a great extent by pooling in resources and expertise through concerted efforts of SI actors and utilisation of current and emerging technologies to prepare and apply the various SI products.

Recommendations

Therefore, this study recommends the following:

i   **Continued co-production:** This has dramatically helped inculcate close working relations between SI producers and consumers and enhanced the accuracy, understandability, credibility, accessibility, and timeliness of products. However, it needs to push SI consumers to own the products and take the desired action. Incorporating the security agencies and academia can help develop even long-term products as is the case with the US Global Trends. Co-production thus leverages the strengths of different producers who learn from each other, test assumptions, and ease information sharing to fuse scenario-building and solution-based reporting in the joint reports. Further, this will help SI consumers to adopt early action best practices and take long-term benefit proactive projects that boost resilience to eventualities. In an anticipatory approach, the co-producers will jointly develop a set of realistic thresholds that will be monitored and trigger the release of the ring-fenced crisis funds for action, thereby bypassing bureaucratic red tape.

ii   **Application of technologies:** SI producers could embrace technologies to effectively deal with uncertainties and data issues, thereby improving the quality of SI products. Insufficiency or excess data of poor quality, dis-aggregated, in different formats or missing data can be resolved by SI producers and consumers enhancing their own collection and using

openly available sources. Synchronising the existing data is necessary to allow SI producers to develop sound analyses. Technologies can aid in addressing data limitations that face SI producers. SI producers relying on the output of Taifa-1 as well as working closely with other SI producers with remote sensing capabilities can also improve the quality of data. Adoption of Big Data Analytics, Artificial Intelligence can offer simulations, scenario building, and modelling by dealing with the data during analysis. Technology can help SI consumers think through the big picture and visualise the data.

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