



The Role of Business Information System in preventing Small and Medium Enterprise from falling into the Valley of Death

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Abstract

Small and Medium Enterprises (SMEs) play a pivotal role in the Mauritian economy with their survival of paramount importance. However, those businesses faced challenges in the decision-making process such as not having the right data, wrong interpretation of data or a lack of knowledge. In addition to the recent increase in freight costs, business owners have been significantly impacted, resulting in higher prices for goods. Many systems have been developed to aid in the decision-making process. As technology evolves, the integration of Artificial Intelligence (AI) into these systems has materialised, leading to the emergence of Intelligent Decision Support Systems (IDSS) through the association of AI with Decision Support System (DSS). Given the dearth of research on IDSS in the Mauritian context, this study investigated the adoption of IDSS amongst SMEs in Mauritius. An extended framework comprising the technology, organisation, environment/technology acceptance model was employed. Using a purposive sampling technique, a cross-sectional survey was carried out amongst 100 SMEs in order to gain insight into SMEs' owners adoption of IDSS in their businesses. Salient findings from the hypothesis test showed that innovativeness is significantly related to both perceived usefulness and ease of use. Competitive advantage is shown to lead to perceived usefulness of IDSS and government support contributed to the perceived ease of use of IDSS. Given that respondents will mostly likely adopt IDSS if they perceive its innovative capability to their businesses. Proper awareness campaigns should be carried out to showcase the benefits and innovative features of IDSS. Moreover, Government support plays a crucial role in the adoption of SMES. The Government should provide incentives and further training to the SMEs on the IDSS. Overall, SMEs are interested in adopting a disruptive tool like IDSS and recognise IDSS as advantageous to their businesses, if necessary, support is available.

Keywords: Small and Medium Enterprise, Decision Making, Intelligent Decision Support System, Mauritius

INTRODUCTION

According to a report published by the Ministry Of Industrial Development, Smes And Cooperatives (Smes Division), the contribution of Small and Medium-sized Enterprises (SMEs) in the Gross Domestic Product (GDP) of Mauritius is 40% and 54.6% in the employment rate (Minister of Business, Enterprise and Cooperatives, 2016). Empirical research has demonstrated that SMEs have a significant role in an economy, Erdin and Ozkaya (2020) acknowledged that SMEs serve as a catalyst to the economic growth in Turkey and in both developed and developing



countries (Erdirin & Ozkaya, 2020). Myslimi and Kaçani, made a similar observation, noting that SMEs in India contributed approximately 6% to the GDP in 2006-2007 (Myslimi & Kaçani, 2016). Similarly, Hoda and Angjeli (2023) stated that the economic development of Western Balkan countries is predominantly influenced by SMEs. Despite being acknowledged as a crucial engine to economic growth (Myslimi and Kaçani, 2016), SMEs face numerous challenges such as lack of finance (Gobin-Rahimbux et al., 2017), fierce competition, complicated tax administration (Hoda and Angjeli, 2023), lack of marketing skills, cost of production and no information technology (IT) infrastructure (Cant & Wiid, 2013). 80% of SMEs in Africa tend to fail within the first 5 years of operations and this is due to lack of capital and resources (Nwachukwu, 2023). Digitalisation has not had any impact on SMEs and SMEs are inadequate in numerous ways such as adoption of technology, value added products and services and absence of innovativeness (News On Sunday, 2016). SMEs are finding it hard to engage in the digitisation process as it requires investment, an internal change in the business practices or strategies and learning new skills (Dethine et al., 2020). The risk of losing investment along with lack of capital, are factors which hinder digital transformation within SMEs (Dethine et al., 2020). To survive intense competition, gain greater market share, increase profitability (Tidd and Bessant, 2009) and meet customer needs, it is crucial for SMEs to embrace digital transformation (Dethine et al., 2020).

If SMEs effectively utilise the data they generate, they can enhance product sales and identify internal and external factors that might negatively impact their business (Perdana et al., 2022). Data driven decision making enables SMEs to make informed decisions and be competitive (Acelera pyme, 2023). Business owners and managers are sometimes required to make quick business decisions (Deep, 2023) and having the right set of data accessible is primordial when making strategic decisions. In a competitive business environment, decision-making is a crucial factor affecting a business performance (Kemppainen et al., 2022). With the advent of new technologies, systems such as Management Information System (MIS) have emerged to aid business owners and managers in their decision-making process in a short timespan (Alzhrani, 2020). MIS collects, stores and transfers information within the organisation (Alzhrani, 2020). MIS encompasses several subsets such as Decision Support Systems (DSS) and Executive Information Systems (EIS) (Nowduri, 2019). Decision Support system is a software which assists managers in their decision-making process. The DSS provides information through a human machine interface during semi-structured activities. It aids decision makers in analysing and identifying issues as well as proposing solutions to the problems detected (Fang, 2009). In recent years, the use of artificial intelligence (AI) has been rising (Akinwalere & Ivanov, 2022). Conglomerating AI with DSS results in Intelligent decision support systems (IDSS) (Zeebaree & Aqel, 2019). The objective of this research is to examine how an Intelligent Decision Support System (IDSS) can benefit SMEs in their decision-making processes and how it will prevent them from falling into the valley of death. Additionally, the factors that influence the adoption and use of IDSS will be investigated.

LITERATURE REVIEW

Intelligent Decision Support Systems (IDSS)

Intelligent Decision Support Systems emerged in the 21st century (Poszler & Lange, 2024). IDSS is a subset of DSS, which incorporates artificial intelligence methodologies (Afriliana et al., 2023). IDSS is a computer application which helps decision-makers in their decision-making processes through techniques such as data mining, modelling and visualisation application (Litvinov, 2024). The architecture of the IDSS consists of a database, knowledge base, and model base, with some or all of these modules potentially utilising AI methods. The database stores data which pertains to a specific decision problem such as environment variables, course of action and indicators of performance. The knowledge base stores problem-solving strategies such as assisting decision makers in choosing a decision alternative or advice on the potential outcomes of a decision. The model base is a repository, which is responsible for formalising the model of the decision problem. Algorithms and methodologies are used to develop solutions from the models (Phillips-Wren et al., 2009).

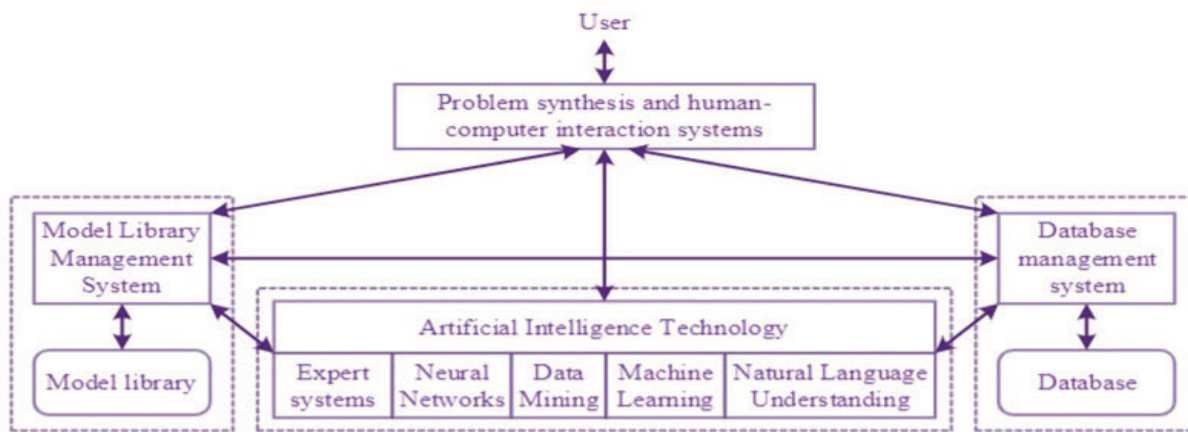


Fig.1. Intelligent decision support system (IDSS) basic architecture (Zhang, 2024)

Once an analysis is performed, the IDSS generates a report with recommendation, forecast and explanations (Phillips-Wren et al., 2009) of a particular decision. The forecast will mention the states and actions within the simulation. The recommendation part will provide suggestions and actions and the system will elaborate and justify the recommendation it has provided (Phillips-Wren et al., 2009). The approaches and techniques which are used by the IDSS aids manager or owners in their decision processes through the integration of human knowledge and modelling techniques. With such a system, businesses can gain a competitive edge (Tariq & Rafi, 2012). In a highly competitive market, the use of IDSS can be beneficial for firms and especially SMEs. By making use of IDSS, leaders and managers will be able to adopt and implement the right strategy in tedious decision-making situations (Rouhani et al., 2016). In a survey conducted by Vistage, it was observed that 29.5% of SMEs' owners were in favour of AI applications (Vistage, 2018) due



to the benefits that can be gained from it, such as reduced expenses, minimised risks, enhanced productivity and optimisation of tasks (Bhalerao et al., 2022)

Enablers of IDSS

The first enabler is skilled and IT literate employees. The role of the manager of the SME is important in the adoption of IT because they will have to share the knowledge, expertise and practices that will allow the successful implementation of IT. It is important for the SMEs' employees to be educated with regards to the IT infrastructure that is being implemented and the role that they would have to play in it (Lokuge & Duan, 2023).

A supportive organisational culture is also important. Organisational culture is defined as the morals and values that are set within an organisation and its sub-units that act as a guidance for the members to follow. The level of innovation within an organisation is highly influenced by the organisational culture. As far as SMEs are concerned, due to size and constraint on availability of resources, managers should ensure the IDSS' implementation would align with organisational culture and promote and support such change (Lokuge & Duan, 2023). Similarly, organisational strategy is also an enabler. An organisation strategy consists of objectives, goals, policies which have been set for running a company. The clarity of objectives and goals are important as they have an impact on the success of IDSS' implementation (Lokuge & Duan, 2023)

IT infrastructure is also a crucial enabler. To ensure successful IDSS' implementation, it is important to have well-established IT capabilities and resources. Those IT resources include physical IT resources and the SMEs IT staff. SMEs face multiple setbacks in terms of resources (Lokuge & Duan, 2023; Walther et al., 2017). It is imperative to implement an effective management of IT resources, which includes staff training and enhancement of employees' skills to develop their competencies (Lokuge & Duan, 2023).

Adoption Theories

Adoption theory explores an individual acceptance or rejection of a disruptive or innovative tool. In some frameworks or models, adoption is not only about acceptance but it also encompasses the degree to which innovation is integrated in a specific context (Straub, 2017). It is important to note that user acceptance and confidence are significant for the continuity of the advancement of new technology. Numerous models have been created to gain an insight on user adoption of technology such as Technology Acceptance Model (TAM), Theory of Planned Behaviour and Diffusion of Innovation theory, Theory of Reasoned Action and Unified Theory of Acceptance and Use of Technology (Taherdoost, 2018). For this research TAM and Technology-Organization-Environment (TOE) Framework has been used.

Technology-Organisation-Environment (TOE) Framework

The TOE framework considers technology, organisation and environment as factors which will impact the adoption of technology within a business (Abed, 2020). The use of TOE will enable the



researcher to identify which factors can be enhanced to enable the adoption of IDSS within SMEs (Setiyani & Rostiani, 2021). The use of TOE has been proven to be successful in the adoption of cloud computing and ecommerce (Chatterjee et al., 2021). For this study, constructs pertaining to TOE have been identified and used to build the conceptual model.

Technology Acceptance Model (TAM)

The use of TAM has been widely used in exploring the acceptance of novel technology by users (Aljarrah et al., 2016). An individual intention to use a system or application is determined by 2 variables, perceived usefulness (PU) and perceived ease of use (PEOU) (Asiaei & Rahim, 2019). PU refers to the degree a user thinks that using a system will improve job performance. PEOU refers to the extent a user thinks using a system requires little to no effort (Aljarrah et al., 2016). The use of IDSS within SMEs has not been explored thus the use of TAM model will enable the researcher in identifying how SMEs owners perceive the use of IDSS.

Conceptual Model and Hypothesis

The TAM and TOE models have been widely adopted in studies within an organisational context. Throughout empirical studies, the TAM and TOE models are quite dominant. Those models have been used to explain the adoption of a particular technology at an individual level. The constructs of the TAM model, namely PU and PEOU, have been used to explain 40% of the use of a system. As the TOE has unclear and generic constructs, the collision and integration of the TAM model strengthens the TOE model. The integration of both models has been advocated by other researchers as it enhances the predictive power of the resulting model and surpasses some of their individual limitations (Gangwar et al., 2015). Empirical studies have demonstrated that the TOE model enables the identification of determinants in a socio environmental context (Chatterjee et al., 2021).

The following is the Conceptual Model and hypotheses:

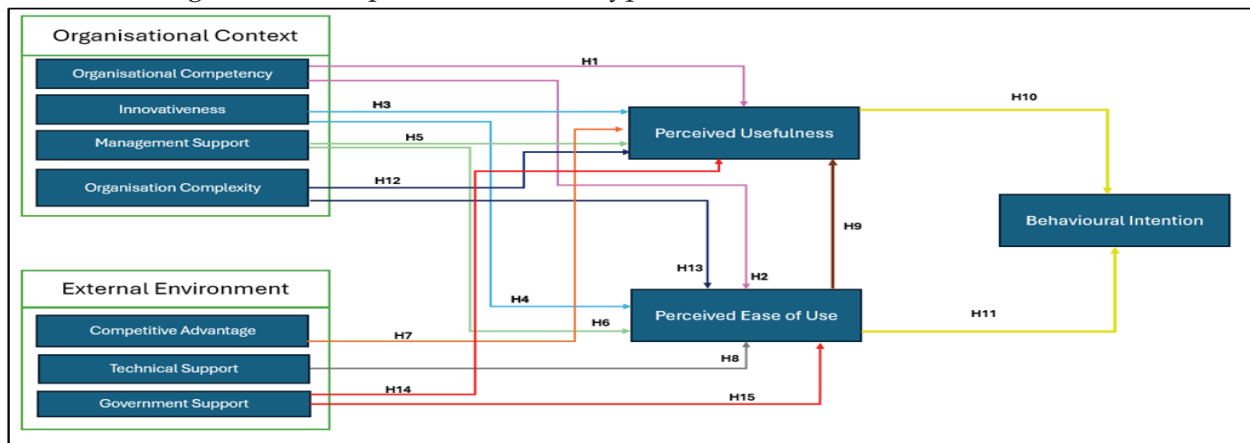


Fig.2. Conceptual Model



In the proposed conceptual model, under the TOE framework, we have 4 organisational and 3 environment variables. TAM-based constructs have also been used, namely PU and PEOU.

Organisational Competency (OC)

Organisation Competency or Organisation readiness refers to the combination of skills, knowledge and attributes that is needed to perform a task within an organisation (Ncube & Chimucheka, 2019). The necessity of Organisational Competency is indicated in the TOE framework (Chatterjee et al., 2021). It is primordial to have the right resources available (Esen & Özbağ, 2014) when digital transformation is being done within a firm. It includes having the appropriate software, hardware and technical infrastructure (Esen & Özbağ, 2014). Two major factors that might hinder the IDSS' adoption within SMEs are economic cost and lack of technical knowledge. Employees who lack capabilities to effectively use a particular technology are unlikely to perceive its usefulness (Chatterjee et al., 2021). The following hypotheses are proposed:

H1. Organisational Competency has a positive effect on Perceived Usefulness of IDSS within SMEs

H2. Organisational Competency has a positive effect on Perceived Ease of Use of using IDSS in SMEs.

Innovativeness (IN)

Innovativeness enables firms to gain a competitive advantage and improve their efficiency and effectiveness (Thong, 1999). Digital transformation requires one to have a knowledge of the system and insight into the concerns and challenges related to the implementation of technological innovations (Skafi et al., 2020), such as IDSS. Owners or top managers who have some notion of a system and its potential benefit are more likely to be in favour of its implementation (Mahakittikun et al., 2021). Thong's analysis stated that if a technological innovation is better than an existing manual system or paper-based system, is aligned with the requirements of the organisation and is user-friendly, it would be more likely that the attitude of the employees and other stakeholders will be favourable to the proposed innovation (Thong, 1999), such as IDSS. SMEs' owners will be in favour of the adoption of IS if they perceive its use favourably in their businesses and if it is compatible and easy to use (Thong, 1999). Based on the above discussion, the following hypotheses were formulated:

H3. Innovativeness has a positive effect on Perceived Usefulness of using IDSS within SMEs.

H4. Innovativeness has a positive effect on the use of IDSS through Perceived Ease of Use.

Management Support (MS)

Since 1960s, empirical studies have been pointing out the importance of top management support in the adoption and implementation of information systems (IS) within both large and small businesses (Thong et al., 1996; Lautenbach et al., 2017). The acceptance of a system depends on the technical understanding and comprehension of that system by the management (Nguyen



et al., 2022). SMEs' top management should ensure that the proper resources are being allocated to encourage and support end users to accept IDSS. In some studies, it has been argued that one of the obstacles of IT or IS adoption is the lack of management support (Lautenbach et al., 2017). The adoption of IDSS will be feasible if business owners perceive that such a system will be beneficial to its business and that the employees will easily level up on making use of the IDSS in their daily operations. Hence the following hypotheses has been postulated:

H5. Management Support has a positive effect on Perceived Usefulness of IDSS adoption in SMEs

H6. Management Support has a positive effect on Perceived Ease of Use of IDSS adoption in SMEs.

Competitive Advantage (CADV)

A firm possesses a competitive advantage when that firm is incorporating a strategy that makes the firm more valuable and that strategy is not being implemented by any other of its competitors (Barney, 1991). The main factor that influences the competitive strength of business is the ability to take and adopt convenient decisions. To stay competitive, SMEs should be able to adapt and respond rapidly to business changes (Rouhani et al., 2016). To create a competitive advantage, DSS must meet 3 criteria. Firstly, the use of DSS must become a significant attribute of a business. Secondly, "...DSS must be unique and proprietary to the organization...". Thirdly, the benefit provided by DSS must be viable for a minimum of 3 years (Power, 2000). Similarly, the same criteria will be applicable to IDSS and its use in SMEs. The use of IDSS might enable SMEs to improve their decision-making process and create new opportunities to promote innovation. Chatterjee and al stated that a firm which makes use of AI is said to gain a high competitive advantage (Chatterjee et al., 2021). Applying that principle to IDSS, which uses AI techniques, SMEs might also attain a high competitive advantage if they adopt IDSS. Hence the following hypotheses has been postulated:

H7. Competitive Advantage has a positive relationship with Perceived Usefulness of IDSS.

Technical Support (TS)

Technical support refers to experts that provide technical assistance or support for implementing IT solutions (Gono et al., 2013), such as IDSS. It also refers to the training and technical assistance that is being provided by trainers (Caratiquit & Caratiquit, 2022) to make use of IDSS. Technical support is vital in the acceptance of a particular technology (Sulaiman et al., 2023). According to Professor Gopal Ramchurn, Mauritius still needs offshore assistance to adopt AI technologies (Jandanee, 2018). Due to what was stated by Professor Ramchurn, research on technical support is important in the context of Mauritius, which has recently adopted AI tools (Moosbally, 2018). If Mauritius is still dependent on foreigners for the adoption of AI techniques, it is likely that even SMEs will need such support when implementing IDSS. The provision of support and assistance towards the use of a new system has an impact on PEOU and PU. In a research conducted by Gobin-Rahimbux et al., SMEs agreed that training is a major factor in the use of IT. Based on the above, the following hypothesis has been suggested:

H8. Technical Support has a positive effect on Perceived Ease of Use of IDSS usage within SMEs.



Perceived Ease Of Use (PEOU)

PEOU can be defined as an individual or business perception of a system which will enable them to perform their tasks without much effort. PEOU is of great consideration for an individual or organisation adopting IT or ISs. PEOU is said to be the predictor of usefulness. The easier it is to use a system, the more it is likely to encourage SMEs' employees to use the application (Chatterjee et al., 2021). Based on the above discussion, the following hypothesis has been formulated:

H9. Perceived Ease of Use of IDSS within SMEs has a positive effect on Perceived Usefulness.

Behavioural Intention (BI)

The use of technology is said to be highly influenced by BI (Songkram et al., 2023). In a study conducted by Dulcic et al. in 2012, they stated that both PU and PEOU must be considered when predicting BI of the use of DSS (Dulcic et al., 2012). PEOU and PU must be considered when predicting BI (Dulcic et al., 2012) of IDSS. In empirical studies, it was found that PEOU and PU have an influence on BI. Moreover, each of TAM's main constructs independently affects BI to use IT systems (Dulcic et al., 2012). Hence the following hypotheses have been suggested:

H10. Perceived Usefulness of IDSS has a positive effect on Behavioural Intention.

H11. Perceived Ease of Use has a positive effect on Behavioural Intention.

Organisational Complexity (OCOMP)

OCOMP refers to the inconveniences and impediments of using and understanding a system. From the perspective of IDSS adoption in SMEs, OCOMP is an internal organisational issue (Chatterjee et al., 2021). The adoption rate is severely impacted by organisational complexity. The complexity conceptualisation is assessed by evaluating attributes such as the usage of the IDSS infrastructure, the time needed to complete a task, the effectiveness of decision-making process and the user interface (Chatterjee et al., 2021). As complexity increases within an organisation, employees will find it difficult to use the proposed technology or innovative system, thus leading to dissatisfaction and unable to perceive the usefulness of the application. The more complex a system is, the more PU and PEOU tend to decrease (Chatterjee et al., 2021). Based on the above discussion the following hypotheses has been suggested:

H12. Organisational Complexity of the use of IDSS has a negative effect on Perceived Usefulness.

H13. Organisational Complexity of the use of IDSS has a negative effect on Perceived Ease of Use.

Government Support (GS)

Governmental institutions provide facilities such as information programs, training opportunities and technological grants. Small businesses are taking advantage of such opportunities. However, to be able to benefit from such support, the Government should be proactive in informing SMEs about the facilities that are being provided to them. SMEs' owners should be convinced that investing their resources in those programs will be beneficial (Nguyen et al., 2022). The Government of Mauritius has been providing many facilities such as "...intensive training, workshops, logistics, support schemes to increase visibility, consolidate competitiveness and improve productivity and Innovation Scheme" (Le Matinal - Mauritius' Digital French News



Channel, 2022). The Government of Mauritius' support can also be in the form of a legal framework. Businesses can be subjected to protection (Nguyen et al., 2022) that relates to IDSS, which stores enormous data within the IDSS' database. Based on the above discussion the following hypotheses have been suggested:

H14. Government Support in the adoption of IDSS has a positive effect on Perceived Usefulness.

H15. Government Support in the adoption of IDSS has a positive effect on Perceived Ease of Use.

RESEARCH METHODOLOGY

A non-probability sampling strategy was being adopted, as our focus is solely on SMEs and the intention is not to gather feedback from the entire Mauritian population, which includes entities beyond SMEs. Purposive sampling strategy was opted for this research. This technique allows the researcher to choose what information needs to be known and look for the targeted individuals who are willing to supply information on the basis of their knowledge and experiences they possess. Additionally, the significance of the participants' readiness and being free to participate as well as their capacity to convey their experience and views in a coherent manner is also important (Etikan et al., 2016). The chosen method for data collection to address the research objectives was the questionnaire. The researcher anticipated the participation of 100 SMEs to gain insights into the perceptions of owners or managers regarding IDSS. A Likert scale has been used to measure the participants' opinions on certain constructs. The scale consisted of "1 = strongly disagree" to "5 = strongly agree". To design the questionnaire, Google's Form was used and through the same platform we generated a link which was sent to SMEs' owners. To analyse the collected data, the Structural Equation Modelling (SEM) technique, specifically SMART-PLS, was employed. The SEM has been used to determine the research's measurement and structure model (Zaato et al., 2023). Moreover, it enables researchers to explore the relationships between constructs (Chin, 1998). PLS-SEM can analyse complex structural equation models which contain numerous constructs and indicators (Kamis et al., 2021).



Results and discussion

Description	Options	Percentage
Type of SMEs	Microenterprise	81.00%
	Small Enterprise	8.00%
	Mid-market enterprise	8.00%
	Medium enterprise	3.00%
Application of IT (No Adoption)	Microenterprise	54%
	Small Enterprise	5%
	Mid-market enterprise	4%
	Medium enterprise	1%
Tech Literate	Yes	92%
	No	8%
Why is IT not used?	Costly	32
	Lack of Expertise	13
	Focus on day to day business operations	51
Software used by SME	Microsoft application (Word, Excel)	8
	Sicorax	1
	QuickBooks	1

Table 1: Descriptive Model

Measurement model

The selected tool for conducting data analysis and testing our model is SmartPLS version 4.0. The image below is an illustration of the measurement model tested by employing the PLS-SEM algorithm and reflective indicators (Indicator Loading).

	Behavioural Intention	Competitive Advantage	Government Support	Innovativeness	Management Support	Organisational Competency	Organisational Complexity	Perceived Ease Of Use	Perceived Usefulness	Technical Support
Behavioural Intention	0.952									
Competitive Advantage	0.668	0.882								
Government Support	0.554	0.176	0.845							
Innovativeness	0.478	0.644	0.293	0.85						
Management Support	0.657	0.584	0.468	0.644	0.903					
Organisational Competency	0.524	0.484	0.479	0.566	0.652	0.844				
Organisational Complexity	0.156	0.434	0.214	0.29	0.206	0.082	0.93			
Perceived Ease Of Use	0.769	0.651	0.465	0.621	0.6	0.595	0.12	0.964		
Perceived Usefulness	0.719	0.741	0.338	0.689	0.604	0.532	0.211	0.762	0.888	
Technical Support	0.553	0.277	0.533	0.348	0.602	0.566	-0.049	0.402	0.34	0.881

Table 2: Discriminant validity



	Cronbach's alpha	Composite reliability (rho_c)	AVE
BehaviouralIntention	0.896	0.95	0.906
CompetitiveAdvantage	0.905	0.933	0.778
GovernmentSupport	0.798	0.882	0.714
Innovativeness	0.807	0.886	0.723
ManagementSupport	0.925	0.946	0.816
OrganisationalCompetency	0.867	0.908	0.712
OrganisationalComplexity	0.925	0.951	0.865
PerceivedEaseOfUse	0.924	0.964	0.93
PerceivedUsefulness	0.863	0.917	0.788
TechnicalSupport	0.859	0.912	0.776

Table 3: Convergent Validity

The initial step of the data analysis is to evaluate the quality of the reflective measurement model in terms of reliability and validity. An indicator loading of above 0.7 is considered to be an acceptable reliability (Hair et al., 2019). In our study, we observed that 3 items did not load satisfactorily on their latent constructs. Therefore, items from Innovativeness Construct, Organisational Complexity Government Support Construct were culled from the analysis. The reflective measurement model is to assess the internal consistency reliability by using composite reliability (CR) (Hair et al., 2019). The CR measurements of this research were all above 0.8, thus meeting a satisfactory measurement reliability. The Cronbach's alpha is above 0.7, which is a reasonable value. Additionally, the Average Variance Extracted (AVE) and Heterotrait-Monotrait Ratio of Correlation (HTMT) were assessed. In our research, our AVE was above 0.5. The composite validity, AVE and HTMT measurement adheres to the recommended values which means we have an acceptable convergent validity. The Discriminant Validity (DV) was also measured using the Fornell-Larcker criterion, Heterotrait-monotrait (HTMT) and Cross loading matrix (Sami, & Sidek, 2017). We observed that the HTMT ratio of the constructs is less than 0.9. This means the constructs adequately captured a unique phenomenon (Sami & Sidek, 2017) and is not loading on other items. Fornell and Larcker criterion (FLC) has also been calculated and examined. In our FLC, the values of the square root of the AVE for our reflective construct is higher than the correlations of these constructs with latent variables. This indicates that our constructs are appropriate estimates of unique concepts (Hair et al., 2021).

Structural Model

To calculate the bootstrap and generate the t-statistics, we have used a subsample of 10,000. In the structural model out of 15 relationships, 7 are significant and 8 are not significant.



Discussion and Hypothesis Test

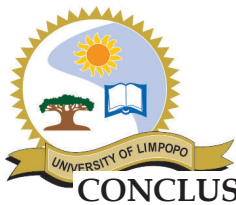
Hypotheses	Constructs	Path	Standard deviation (STDEV)	T statistics (O /STDEV)	Significance	Supported
1	OrganisationalCompetency -> PerceivedUsefulness	-0.036	0.09	0.402	Not Significant	No
2	OrganisationalCompetency -> PerceivedEaseOfUse	0.205	0.136	1.506	Not Significant	No
3	Innovativeness -> PerceivedUsefulness	0.225	0.11	2.037	0.05*	Yes
4	Innovativeness -> PerceivedEaseOfUse	0.374	0.103	3.641	0.001***	Yes
5	ManagementSupport -> PerceivedUsefulness	0.031	0.112	0.281	Not Significant	No
6	ManagementSupport -> PerceivedEaseOfUse	0.188	0.12	1.567	Not Significant	No
7	CompetitiveAdvantage -> PerceivedUsefulness	0.391	0.112	3.504	0.0001***	Yes
8	TechnicalSupport -> PerceivedEaseOfUse	-0.089	0.107	0.836	Not Significant	No
9	PerceivedEaseOfUse -> PerceivedUsefulness	0.353	0.108	3.285	0.0001***	Yes
10	PerceivedUsefulness -> BehaviouralIntention	0.317	0.116	2.725	0.01**	Yes
11	PerceivedEaseOfUse -> BehaviouralIntention	0.528	0.114	4.635	0.001***	Yes
12	OrganisationalComplexity -> PerceivedUsefulness	-0.083	0.083	1.003	Not Significant	No
13	OrganisationalComplexity -> PerceivedEaseOfUse	-0.099	0.085	1.165	Not Significant	No
14	GovernmentSupport -> PerceivedUsefulness	0.059	0.092	0.644	Not Significant	No
15	GovernmentSupport -> PerceivedEaseOfUse	0.238	0.092	2.577	0.01**	Yes

Table 4: Hypotheses and results

From our hypothesis test, Organisational Competency (OC) is not significant with both PU and PEOU. This refers to the business environment and even, if they have the workforce needed, they won't perceive the adoption of IDSS as necessary and useful. This can be supported by the data that we have captured whereby we can observe that SMEs would rather focus on their business operation rather than invest in ICT. Innovativeness is positively related to both PU ($B=0.22$, $p<0.05$) and PEOU ($B=0.37$, $p<0.001$). Moreover, we can say that SMEs regard the use of IDSS as useful to their business. To stay competitive, SMEs are forced to go towards the use of ICT (Zamani, 2022). From the data collected, this seems quite reasonable as 92% of our participants are IT literate. We can also depict that Innovativeness has an influential effect on PEOU than PU. Hypothesis H5 and H6, which is related to MS, have been analysed. Management support is not significant with both PU and PEOU, which indicates that the MS does not have a significant impact on PU. Based on the data collected, SMEs' owners and managers don't invest much on IT and would rather focus on their business operation. Additionally, from our analysis, some of the participants don't have a system as it is costly or they lack expertise. Competitive advantage is strongly related to PU. This reflects that SMEs regard IDSS as a useful tool for their business. In the business world, competition is fierce and maintaining a competitive advantage will sustain and increase business opportunity. Small businesses must learn to be distinct in their field to sustain their business operations (Gardner, 2019). From the data captured and the hypothesis test, we can denote that SMEs do believe that IDSS adoption will enable them to enhance their business operation but also remain competitive. Therefore, SMEs perceive the use of IDSS as useful. Technical Support (TS) does not have a significant impact on PEOU of IDSS within SMEs. This finding is intriguing, especially considering that other journals have regarded TS and PEOU as significant.



TS has a direct and positive relationship on PEOU. If proper training and support is provided, the use of ICT applications is likely (Caratiquit & Caratiquit, 2022). Moreover, the provision of support providers had a significant impact on the adoption of cloud computing in SMEs (Chen et al., 2023). In our research it is possible that SMEs might have the technical knowledge and support to adopt IDSS, but they might not perceive it as being useful and would rather focus on their business operation and survival. PEOU has a significant effect on PU. This implies that SMEs are likely to make use and adopt IDSS if they perceive it as easy to use. PU and PEOU are both determinants of the TAM model, which explains the correlation between user acceptance and technology (Binyamin et al., 2018). PEOU and PU have been massively studied in other research and it has been shown that there is a positive relationship between PEOU and PU, with a high estimation of $\beta = 0.618$ ($p < 0.001$) (Binyamin, Rutter, & Smith, 2018). In order to have SMEs use IDSS, we should configure it in a way which is user-friendly and provide the users a clear instruction on how the IDSS should be used so that it benefits the business. Additionally, training and support must be provided so that the users perceive the use of IDSS to be easy. Both PU and PEOU have a significant relationship to behavioural intention. This implies that in the context of IDSS adoption amongst SMES, both these constructs influence use of IDSS. If SMEs perceive the IDSS as a tool which will improve their business process such as improving the decision-making process enabling them to quickly adapt to unforeseeable factors while performing the decision-making process, they will be likely to use IDSS. The smooth integration and use of the system without much effort is likely to make SMEs adopt and use IDSS. it. The more the users are confident that a system is easy to use and understandable, the higher the BI is (Budi et al., 2013). Complexity is not significantly related to both PU and PEOU. In empirical studies, OCOMP has been a factor which has been considered as an inhibitor of disruptive technology such as data management, blockchain and big data analytics (Chen et al., 2023). One of the reasons why SMEs may not perceive the usefulness of IDSS is because they might not have the necessary information and knowledge of IDSS and perceive it as a complex tool (Chen et al., 2023). In a previous study conducted by Parveen and Sulaiman, (2008), it has been asserted that a system's complexity has an inverse proportion to PU as well as PEOU. This implies that if the SMEs' owners perceive IDSS as a complex system, they would perceive it as useless (Chatterjee et al., 2021). Government Support (GS) contributed to the perceived ease of use of IDSS while being non-significant with PU. The government of Mauritius has always been providing financial support to SMEs and has encouraged them to adopt ICT. An SME Equity Fund has been put in place to support SMEs who have a turnover above Rs 10 million, but below Rs 250 million. From our analysis, we can deduce that SMEs who are supported by the Government in the form of training programs, IDSS technical assistance or financial assistance will perceive IDSS as easy to use. If the right support is provided by the Government such as free training on IDSS, it will help SMEs' survival and growth. Most of the questions about GS from our questionnaires had a high percentage of 3 (neutral). We can assume that SMEs' owners are not fully aware of how the Government is supporting SMEs.



CONCLUSIONS

In the research, we synthesised the findings to identify and analyse how the determinant's antecedents affect the adoption of IDSS within SMEs in Mauritius. The study revealed that Innovativeness, Competitive Advantage, GS towards PEOU, PU towards BI and PEOU towards BI are significant factors influencing the adoption of IDSS. We also found that SMEs are more focused on their day-to-day operation than on the adoption of technology. Despite most of the survey participants being IT literate, those SMEs do not make use of any technology. PU and PEOU of IDSS has an impact on BI within SMEs to adopt and use the system. It indicates that SMEs' owners perceive the use of IDSS as easy to use and beneficial. Participants of the research are IT literate thus it seems they will be able to adapt and use such a system. Competitive Advantage has also a significant impact on PU which means that the adoption of IDSS is likely to enable a business to gain a competitive edge. We can denote that the SMEs are interested in adopting a disruptive tool like IDSS and recognise IDSS as advantageous to their businesses. With such a significant impact on innovativeness, SMEs should be willing to take the risk to implement IDSS in their businesses (Abed, 2020). The impact of GS on PEOU suggests that if the Government aids SMEs in implementing such a system, by the provision of support, the use of IDSS will eventually become a reality. However, GS does not have a significant impact on PU of the use of IDSS. Other researchers have observed that GS has a positive and significant impact on the adoption of technology (Ilin et al., 2017). We don't have enough evidence to suggest why this relationship is not significant and is a profound study to be considered later. In contrast to other academic research that often suggests a direct and positive impact of Management Support (MS) on technology adoption (Oliveira et al., 2014; Ilin et al., 2017), our research indicates that MS does not exhibit any significant impact on the adoption of IDSS. In the study conducted by Hsu et al. (2019), the adoption of technology was contingent on the presence of top management support (Hsu et al., 2019). In our study, the determinant Innovativeness is significant, whereas MS is not. This implies that if SMEs perceive the utility of IDSS, managers and owners of SMEs should be willing to invest time in training both their staff and themselves to effectively utilise IDSS. For SMEs to integrate IDSS within their business processes, the implementation should be done in a congenial way to mitigate risk (Rana et al., 2021).

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