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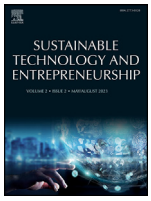

Full Length Article

Green reverse logistics technology impact on agricultural entrepreneurial marketing firms' operational efficiency and sustainable competitive advantage.

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ABSTRACT

The purpose of the study is to analyse how green reverse logistics technology impacts agricultural entrepreneurial marketing firms' operational efficiency and sustainable competitive advantage. Systematic literature review and meta-analytical methodology was adopted to execute the current study. Reverse Logistics Model has been used for the current study as the theoretical model grounding the study as it enables a quick reaction and finding resolution for the customer return whilst regaining the highest value that is possible on each returned item. Results indicate that green reverse logistics technology has a strong influence on agricultural entrepreneurial marketing firms' operational efficiency and sustainable competitive advantage. The study further shows existing research gaps that can be closed by future research studies. The study has limitations which may affect the generalisability of the results since they can only be applied testing the validity and reliability of the developed conceptual model. The study adds to theoretical literature development by extending knowledge on the Reverse Logistics Model theoretical modelling framework since there is paucity of research that have directly applied the same model in agricultural inputs entrepreneurial marketing firms' operational efficiency and sustainable competitive advantage. Practically, the study enhances the need for adoption of contemporary technologies to solve the current challenges facing agricultural inputs entrepreneurial marketing firms' sustainable operational efficiency and competitive advantage in the marginalised areas, not only in developing and emerging economies, but also dotted around the world. The study contributes to the conceptual development, theoretical and practical policy directions applicable to any agricultural inputs entrepreneurial marketing firms. A model can be tested to prove its validity and reliability in future similar studies, using alternative methodologies.

Introduction

Environmental concerns have affected how business is done world over (Alnoor, Eneizan, Makhamreh & Rahoma, 2018; Kiatcharoenpol & Sirisawat, 2020). This has caused agricultural entrepreneurial marketing firms to re-design and re-align their processes in such a way that they are environmentally friendly (Kariuki, Ngugi & Mburu, 2022; Kazancoglu, Ekinci, Mangla, Sezer & Kayikci, 2021). The need for agricultural entrepreneurial marketing firms and consumers to ensure the dismantling of used products in a bid to extract parts for reuse, recycling or alternatively to ensure safe disposal (Martín & Fernandez, 2022). This allows companies to seamlessly integrate value creating activities of different supply chain partners (Martínez, Carracedo, Comas & Siemens, 2021). Seamless integrating of value creating activities include the movement of end of useful life goods or products from consumers to agricultural entrepreneurial marketing firms for the purposes of recapturing value and or ensuring disposal in an environmentally friendly manner (Martínez, Puertas, Martín & Ribeiro-Soriano, 2022; Nyagadza, 2021). This process of moving goods or products from the consumers to the manufacturer for recapturing value or ensuring disposal in an environmentally friendly

Abbreviations: GRLT, Green reverse logistics technology; RL, Reverse logistics; RLM, Reverse logistics model; OE, Operational efficiency; AEM, Agricultural entrepreneurial marketing

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manner is known as reverse logistics (Hills & Hultman, 2013; Isernia, Passaro, Quinto & Thomas, 2019; Julianelli, Caiado, Scavarda & Cruz, 2020). Firms aim at attaining operational efficiency as they strategically manage the process of product returns (Guarnieri, Cerqueira-Streit & Batista, 2020; Alharthi, 2012; Hersleth et al., 2022). By gaining operational efficiency through strategic management of reverse logistics (RL) can result in the improvement of the agricultural entrepreneurial marketing firm's competitive position. Operational efficiency (OE) lead to improved competitive advantage of a firm (Job, Njihia, Maalu & Iraki, 2020). In many agricultural inputs industries RL costs tend to exceed the costs of production. Lack of an integrated supply chain strategy may in the long-term influence the agricultural entrepreneurial marketing firm's competitiveness (Nyagadza, Pashapa, Chare, Mazuruse & Hove, 2022).

There a number of factors that influence RL include; short product lifecycles, liberal return policies than before, increased online product purchases, environmental protection, competitiveness, proper management for the retention of value from returns, lowering product quality, legal implications as agricultural entrepreneurial marketing firms are held accountable for disposal of their waste and changing customer preferences (Bernon & Cullen, 2007; Agrawal, Singh & Murtaza, 2015; Al-Awamleh et al., 2022; Mageto, 2022; Martínez et al., 2022; M. Mousazadeh, Torabi & Pishvaee, 2014; Rajagopal, Kaliani Sundram & Maniam Naidu, 2015). The increased pressure from agricultural inputs entrepreneurial marketing firms as well as the customers' causes reverse logistics to be accorded equal attention just like forward logistics (Al-Awamleh et al., 2022; Mageto, 2022). RL has an impact on the bottom line of firms which varies between 5% and 20% (Dugherty, Autry & Ellinger, 2001) whereas Prahinski and Kocabasoglu (2006) found out that it goes up to approximately 50%. RL helps the firm to achieve sustainability as there is direct positive environmental impact through the reduction of post-production as well as post-consumption waste to water, air and landfills which negatively damages the environment (Fink, Koller, Gartner, Floh & Harms, 2020; Galbreth & Blackburn, 2006; Greiving et al., 2012; Martínez et al., 2021). There is a general consensus that effective management and integration of RL in the agricultural entrepreneurial marketing firms' supply chain operations gives companies the leverage to save costs as well as serving customer satisfaction, customer retention and ultimately long-lasting customer loyalty (Dowlatshahi, 2000; Dyckhoff, Lackes & Reese, 2013; Eggers, Niemand, Kraus & Breier, 2020). RL if utilised in agribusiness can help to reduce or eliminate food waste whilst providing customers with quality as well as food without posing a health risk, wellbeing and the environment (Saruchera & Asante-Darko, 2021; Kraus, Harms & Fink, 2010; Krstić, Agnusdei, Miglietta, Tadić & Roso, 2022). There is lack of empirical evidence the extent to which green reverse logistics technology (GRLT) impact on agricultural inputs entrepreneurial marketing firms' sustainable operational efficiency and competitive advantage.

Existing research gaps, research question and study contribution

The current study seeks to cover gaps in literature and practice. Evidence gap in the current novel study shows that there are some provocative exceptions which arose from it as the conclusions seemed to contradict with the widely available conclusions related to GRLT impact on agricultural inputs entrepreneurial marketing firms' sustainable operational efficiency and competitive advantage (Bernon, Tjahjono & Ripanti, 2018; Colligan, 2015; de Oliveira, Luna & Campos, 2019). Knowledge gap that was unearthed points to the fact that the available and analysed theories as well as literature are all different from the current discoveries of the current study and expectations compared to the wider exhausted research topics (Alarcón, Cortés-Pellicer, Pérez-Perales & Mengual-Recuerda, 2021; Dutta, Talaulikar, Xavier & Kapoor, 2021). Practical knowledge gap discovered is that the current novel study drives a new future research direction in the study area (Lam & Harker, 2015; Lambert, Stock & Ellram, 1998). The nature and scope of GRLT impact on agricultural inputs entrepreneurial marketing firms' sustainable operational efficiency and competitive advantage was addressed and reasons for its existence were explored. Methodology gap is that prior research studies (for example, Nyagadza et al., 2022) have applied different methodological applications which are quite distinctive from the currently applied systematic literature review and meta-analytical methodology. This paves room for a new line of 'strategic thinking', which diverges from the conventional approaches. Empirical gaps identified in the current novel study depicted that there is no research study that has directly made an attempt to make an assessment in line with GRLT impact on agricultural inputs entrepreneurial marketing firms' sustainable operational efficiency and competitive advantage (Zhang, &, He; Becherer, Helms & McDonald, 2012; Adel, Mahrous & Hammad, 2020). This signals that the study is a ground breaking one with novelty aimed to fill the gaps existing in this specialised field. Theoretical gap explored depicted that Reverse Logistics Model (RLM) theoretical modelling framework applied in the current study as the anchor completely fits for the purpose proved to be more superior in terms of its relevancy, practicality and reality, as compared to other prior (for instance, Martínez et al., 2022; Wiebes, Baaij, Keibek & Witteveen, 2007; Wu & Wang, 2000; Xie & Breen, 2014) research inquiries that have used different theories from information systems or information technology (Nyagadza, 2022). Population gap unearthed in the current study depicts that the topic studied is still emerging and under researched, with certain population based on region, gender, race, ethnicity, age and etic being central in this issue.

The current study is premised on answering the major research question: To what extent does GRLT impact on agricultural inputs entrepreneurial marketing firms' sustainable operational efficiency and competitive advantage? PRISMA methodology was employed to address the research question through literature review. This methodology helped the crafting of hypotheses as well as the conceptual model development which can be tested and validated in the future. The contribution of this study includes systematic review and development of the existing knowledge on GRLT's impact on entrepreneurial marketing firms' sustainable operational efficiency and competitive advantage. This helps in laying a theoretical foundation for the concept whilst pointing future research direction which enables answering of questions in this topic and any that are related to this topic. The research also provides insights on how GRLT helps firms to achieve sustainable operational efficiency and competitive advantage through integrated supply chain strategy (Van Hoek, 1999; Ventura & Giménez Thomsen, 2002; Verhees, Lans & Verstegen, 2012; Viatte, 2001; Weil, 1985; Whalen, 2017). This research is premised on the Reverse Logistics Model (RLM). The model points that the company can make use of centralised and also the decentralised reverse supply chain.

Forward logistics is the dominant one with significantly little attention given to reuse, recycle, repair, recalls, remanufacture, refurbish, recover, return, repackage, redistribute and proper disposal (Tepprasit & Yuvanont, 2015; Tibben-Lembke, 1998; Trivellas, Malindretos & Reklitis, 2020; Saruchera & Asante-Darko, 2021). Firms need to integrate their logistics systems with RL in a bid to ensure better revenue prospects. Various researches have been done emphasising on resource commitment but little guidance is given on how firms can attain sustainability whilst enhancing their financial performance through RL. Limited evidence is available in literature to justify the sustainability of resource commitment. RL is not much covered as a core competency in the attainment of sustainable competitive advantage and OE (Tanjung & Wahdiniwaty, 2020; Tepprasit & Paopan, 2016). This research resonates with the suggestions of Martínez *et al.*, 2022, proposing for business models that are green-orientated complying with recycling and proper disposal architecture. The research

also proposes a conceptual model combining GRLT, SCA and OE to ensure material recyclability, reusability and energy quality is carefully managed (Srivastava, 2008; Storey, 1989, 1989; Stroumpoulis & Kopanaki, 2022; Sun, Yu & Solvang, 2022, 2021). It (research) further reinforces the need to build sustainable systems (circular supply chain) that can withstand refusals from customers, recalls, recoveries and proper disposal (de la Roche, de Barros, Chuchu, Nyagadza & Venter de Villiers, 2022). This research will help agricultural inputs entrepreneurial marketing firms to consider development of GRLT in order to achieve OE and SCA. Furthermore, this study can form the basis upon which firms can further develop and enhance the proposed model for the attainment of business sustainability.

In order to answer the research question and filling the unearthed research gaps, the researchers drew theoretical and practical policy insights from a variety of extant literature sources toward green reverse logistics technology impact on agricultural inputs entrepreneurial marketing firms' sustainable operational efficiency and competitive advantage (Sirisawat & Kiatcharoenpol, 2018, 2019; Sirisawat, Kiatcharoenpol, Choomrit & Wangphanich, 2015). The study adds to theoretical literature development by extending knowledge on the Reverse Logistics Model (RLM) theoretical modelling framework since there was paucity of research that have directly applied the model in agricultural value chain management, marketing and general agribusiness (Nyagadza et al., 2022). Practically, the study enhances the need for adoption of novel digital technologies to solve the current challenges facing agricultural entrepreneurial marketing firms in the marginalised areas, not only in developing and emerging economies, but also dotted around the world.

Theory grounding the study: reverse logistics model (RLM)

Reverse Logistics Model (RLM) has been used for the current study as the theoretical model grounding the study as it enables a quick reaction and finding resolution for the customer return whilst regaining the highest value that is possible on each returned item. RLM deals with backward flow of goods from the point of consumption to the origin with the sole purpose of retaining value or ensuring proper disposal combing process resources (Kosacka-Olenjik & Werner-Lewandowska, 2018). The agricultural entrepreneurial marketing firms should centralise its operations and it should with so many people, scattered across so many departments, at so many geographical locations, from several different companies are all needed to process one item (Salomon et al., 1995; Ballou & Srivastava, 2007; Shahidzadeh & Shokouhyar, 2022). *Re*-organising all returned items, types, people and process into one centrally managed group can be the cornerstone for change and success (Rizvandi & Tojari, 2019; Rogers & Tibben-Lembke, 2001; Sadiku-Dushi & Ramadani, 2019). This model ensures accountability for all the returns and linking of all business processes. Linkage of business processes enables agricultural entrepreneurial marketing firms to accrue largest processing savings which results in reduced issues or errors and resultantly reduce reconciliation times between groups (Rashad, 2018; Reddy, Kumar, Choudhary & Cheng, 2022; Reddy et al., 2022;Bakar, Muhamed, Hassan, Halif & Abd Rahim, 2022). Seamless linkage of business operations enables accurate data collection and real-time visibility within the supply chain Martínez et al., (2022). When there is accurate collection of data the firm can enjoy big payoffs and forms a basis for good metrics to assess performance (Younis, Sundarakani & Vel, 2016). Real-time visibility enables timeous resolution of issues which in turn improves companies' system as no one has the overall responsibility. One of the critical issues to keep in mind is that reverse flow requires special competencies in personnel involved specifically on inspection and disposition of the items returned (Larsen, Schary & Phiplip, 2009; Machi, Nemavhidi, Chuchu, Nyagadza & Venter de Villiers, 2022). RLM is in favour of time-based strategies so as to enable value reclamation efforts like high-value product refurbishment (Alshourah, 2022; Lopes, Laurett, Antunes & Oliveira, 2021).

Methodology and meta-analysis

This study's methodology is built on review of articles systematically containing Green reverse logistics technology impact on agricultural entrepreneurial marketing firms' operational efficiency and competitive advantage literature, with an inductive approach. Techniques used are borrowed from the grounded theory for rigorously reviewing literature systematically with guidelines from Nyagadza (2022), as an example. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) approach is shown in Fig. 1, with an eight (8) stage process. The purpose being to draw conclusions and identifying the research gaps. Detailed stages of the process are expressed as follows:

Systematic review planning. Initial stage of the systematic review was a comprehensive predetermination of the stages to follow during the process. The planning stage also included considering meta-analysis of the relevant articles published in the period from January 2012 to August 2022 (ten-year time gap), written in English and with requisite titles and keywords.

Research objective(s) or research question(s) formulation. Second stage of the systematic literature review process involved the refining and definition of the research objectives, which were in line with the topic.

Literature search strategy (database searching and information clustering). In the third stage, we conducted database selection, where there was need to check on the databases which consisted of published work (Table 2 shows summary of journals consulted, publisher, quantity, percent and impact factor (IF) for the current study). The major databases used were Emerging Sources Citation Index (ESCI), ABI/INFORM (ProQuest), ACM, Web of Science (WoS), Cabell's International, Business Source (Corporate Plus), RePEc, SCOPUS, Business Complete, PsycInfo APA (American Psychological Association) and Directory of Open Access Journals (DOAJ).

Selection (inclusion and exclusion), citation and random sampling. We manually looked for relevant databases in the fourth stage. Table 1 clearly shows the process of inclusion and exclusion of the articles. A total of ninety (90) probable articles emerged from the search process. Articles that were excluded (as shown in Table 1) were those written in any other language other than English as this was the only language understood by the members of the research team. Majority of the authors were coming from academia, followed by those in private and political or civic sectors. Documents were analysed with a chronological order, following a trend indicating intense focus on the topic. The selected documents were also analysed using qualitative content analysis, where codes were developed during the process.

Strength of evidence and abstract reading. Further to the prior stage, the next move in stage 5, was to check for evidence strength and confirmation through abstract reading for the selected and included article. Strength evidence was done taking into account authenticity and trustworthiness.

Full text reviewing and analysis. For the confirmed article to be of good quality and strength, downloads were made for full text reviewing and meta-analysis execution. Sampled major contributors to green reverse logistics technology (GRLT), agricultural entrepreneurial marketing (AEM), operational efficiency (OE) and sustainable competitive advantage (SCA) were indicated in Table 3, together with objectives and conclusions for their research studies.

Synthesis and reference chasing. The synthesizing and reference chasing was done by the researcher to look for the best article relevant to the topic under study. The researcher with assistance of expert peers of the subject independently confirmed the credibility and rigour of the research study findings.

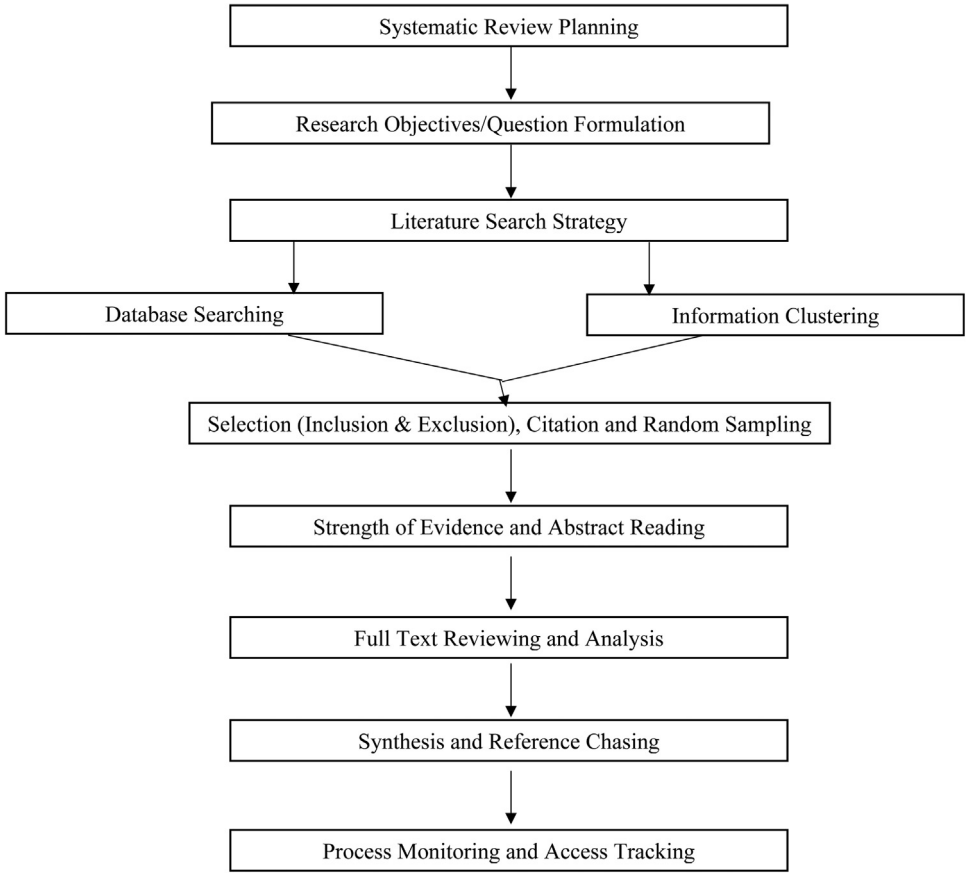

Fig. 1. PRISMA flow chart. **Source:** Researcher's conception (2022).

Process monitoring and access tracking. The eighth stage was meant for process monitoring and access tracking of the selected articles. Access links for tracking of the selected articles were saved via RefWorks cloud-based version for further evaluation.

Articles consulted

Literature review and conceptual model development

The organisation approach of literature in the current study follows a systematic literature review, where the literature has been extensively researched and its quality is critically evaluated (Grant & Booth, 2009). The aim of using this literature organisation approach is to produce highest degree of thorough analysis, hypothesis development and subsequent conceptual model development, that will be tested in future research endeavours. The current research contributes to theoretical advancements towards green reverse logistics technology impact on agricultural entrepreneurial marketing firms' operational efficiency and sustainable competitive advantage by proposing a conceptual modelling framework (shown in Fig. 2), which can be tested for applicability, practicality and relevancy by future researchers.

Table 1
Inclusion and Exclusion criteria of papers and their explanations.

I/E	Criteria	Criteria explanations
Exclusion	Without Full-text (WF)	The researchers had no access to its full text.
	Non-related (NR)	Its definition about the subject neither related.
	Loosely-related (LR)	It does not contain any description related to the subject. It is only used as loose expression cited in the text without being the main focus.
Inclusion	Partially-Related (PR)	It lists one or more but without detailed description.
	Closely Related (CR)	An official document that contains the detailed descriptions of the subject under study.

Source: Secondary data (2022).

Green reverse logistics technology (GRLT)

In recent years, Reverse Logistics (RL) research has risen dramatically, and its definition has evolved. RL is the antithesis of conventional and forward logistics (Beamon, 1999). Murphy and Poist (1988) were the first to define RL by referring to the reverse flow of goods. Later, the term environment featured in Carter and Ellram's (1998) definition of RL, and they believed RL to be an environmentally beneficial strategy. Dowlatshahi (2000) and Carter and Ellram (1998) describe reverse logistics as the method through which a producer collects previously transported products from the point of consumption for potential recycling and remanufacturing. The basics of reverse logistics are demonstrated by Beamon (1999). RL is defined as "the word most frequently used to describe the function of logistics in product returns, source reduction, recycling, materials substitution, reuse of materials, waste disposal, and refurbishment, repair, and remanufacturing" (Stock, Greis & Kasarda, 1998, p. 20). Disposition alternatives in the RL process are referred to in this definition. RL is also defined as the process of planning, implementing, and controlling the efficient, cost-effective flow of raw materials, in-process inventory, finished goods, and related information from the point of

Table 2
Selection criteria, document group and number of documents.

Selection Criteria	Document Group	Number of Documents
Year	2012	06
	2013	08
	2014	12
	2015	07
	2016	04
	2017	04
	2018	07
	2019	12
	2020	06
	2021	16
	2022	08
Total	**10**	**90**
Authors	Politics	15
	Private Sector	21
	Academia	36
	Civil Society	18
Total	**10**	**90**
Geographical Area	All except EU and USA	14
	Africa	09
	Germany	14
	EU (without Germany)	18
	EU (with Germany)	11
	USA	24
Total	**07**	**90**
Research Design	Empirical/Experimental	35
	Theoretical/Conceptual	55
Total	**02**	**90**
Thematic	Green Reverse Logistics Technology (GRLT)	28
	Operational Efficiency (OE)	26
	Agricultural Entrepreneurial Marketing (AEM)	16
	PRISMA	20
Total	**04**	**90**
Area of use	Rural	22
	Urban	35
	Not Specified	33
Total	**03**	**90**

Source: Secondary data (2022).

Table 3
Sample of journals consulted, publisher and quantity.

Journal	Publisher
International Journal of Business Research	IABE
Sustainability	MDPI
Global Journal of Human Resource Management	ECRTD
Modern Supply Chain Research and Applications	Emerald
Advanced Science Letters	American Scientific Publishers
Journal of Transport and Supply Chain Management	AOSIS
European Journal of Operational Research	Elsevier
Procedia-Social and Behavioural Sciences	Elsevier
Journal of Research in Marketing and Entrepreneurship	Emerald
Journal of Small Business & Entrepreneurship	Routledge
British Journal of Management	Wiley
Journal of Accounting and Taxation	Academic Journals
International Small Business Journal	SAGE
Journal of Distribution Science	KODISA
International Journal of entrepreneurship and innovation management	Inderscience
Sustainable Technology and Entrepreneurship	Elsevier
Sustainable Production and Consumption	Elsevier
International Food and Agribusiness Management Review	Wageningen
International Journal of Industrial and Systems Engineering	Inderscience
Journal of Digital & Media Policy	Intellect
Cogent Economic & Finance	Taylor & Francis

Source: Secondary data (2022).
NB: The list is not exhaustive. This is a just an indicative listing of the sampled journals consulted, publisher and quantity by the authors.

consumption to the point of origin in order to recapture value or ensure proper disposal (Alkahtani et al., 2021; Epoh & Mafini, 2018; Job et al., 2020; Kumar & Kumar, 2013).

RL and forward logistics serve quite different functions, hence there is a big gap between the two (Tibben-Lembke & Rogers, 2002). In contrast to forward logistics, which entails getting things to customers, RL focuses on recovering value from returned products through reprocessing or responsible disposal (Alkahtani et al., 2021; Banihashemi, Fei & Chen, 2019). Reverse logistics (RL) is the process by which products or goods are returned from the final consumer to a previous link in the supply chain Alkahtani et al., (2021); M. Mousazadeh et al., (2014); Seroka-Stolka, (2014). This is done so that the material can be recycled, reused, remanufactured, repaired, refurbished, or disposed of safely (Carter & Ellram,1998; Younis et al.,

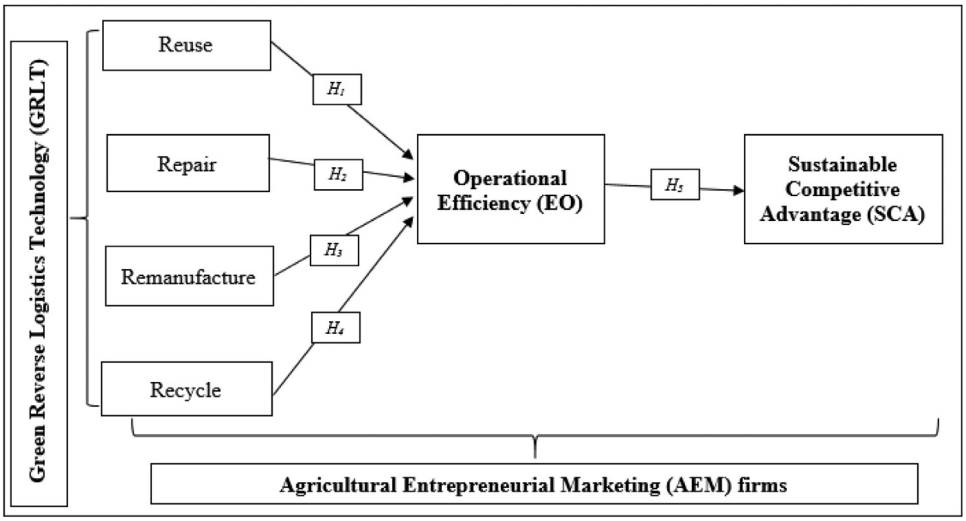

Fig. 2. *Green reverse logistics technology impact on agricultural inputs entrepreneurial marketing firms' operational efficiency and competitive advantage conceptual model.* **Source:** *Researchers' conception (2022), derived from theoretical and literature review.*

2016). Product returns and remanufacturing (Olorunniwo & Li, 2010) recovery, recycling, and reuse (Field & Sroufe, 2007); and redistribution are all actions that have been identified in the literature as being part of RL (Das, 2012). Upstream and downstream supply chains can benefit from reverse logistics strategies since they apply to finished goods, their components, and packaging (Das, 2012; Field & Sroufe, 2007). Similar to other GSCM projects, RL helps boost operational efficiency, boost competitiveness, and decrease overall system costs (Alkahtani et al., 2021; Lau & Wang 2009; Richnák & Gubová, 2021). Due to the potential for significant financial gains and enhanced organisational competitiveness, greening RL networks is often viewed as a valuable strategic tool (Buyukozkan & Cifci, 2012). Therefore, the goal of reverse logistics is to increase efficiency and boost organisational performance by encouraging material reuse and recycling so that lost earnings can be recouped and operational expenses can be reduced (Banihashemi et al., 2019; Richnák & Gubová, 2021).

Automakers like BMW and GM have made extensive use of reverse logistics, as reported by Thierry, Salomon, Van Nunen and Van Wassenhove (1995). Hewlett-Packard, Storage Tek, and TRW are just a few examples of organisations that use reverse logistics as a supply chain technique. Doing this might eventually help organisations become more competitive in their own industry. The initial step in any kind of recovery operation is collection. In the remanufacturing process, products are sorted, collected, and sent to processing centres. Used goods from various origins must be delivered to a centralised product recovery centre (Thierry et al., 1995). Reusable goods must be sorted in some way, and one useful mechanism for doing so is sorting and recycling. Collection strategies, according to Cairncross (1992), should be categorised based on whether materials are separated at the point of consumption (separation at source) or if they are collected and sorted centrally (mixed waste). The purpose of this effort is to separate recyclable materials so that they can be utilised again Banihashemi et al., (2019).

Forward logistics (FL) has been the primary focus of supply chain and logistics management studies, while RL has been largely ignored (Bernon & Cullen, 2007). Beginning with the final consumers, RL collects used or returned products through the product acquisition step, where they are inspected and classified into different categories (Banihashemi et al., 2019). The following stage is to choose the best course of action, which may involve disposal, reuse, repair, remanufacturing, recycling, or some combination of these. Products must be acquired, collected, inspected/sorted, and disposed of, all of which are fundamental RL processes (Banihashemi et al., 2019; Fleischmann, Krikke, Dekker & Flapper, 2000; Guide, Harrison & Van Wassenhove, 2003).

Product Acquisition/Process Control Product acquisition is the process of obtaining used products from end-users for further processing Methods of acquiring and controlling access to products. The term "product acquisition" refers to the procedure of purchasing things from consumers in order to repurpose them (Banihashemi et al., 2019). Due to the unknowns of time, quantity, and quality of used products, this factor is crucial to RL's success (Agrawal et al., 2015). Retailers frequently employ gatekeeping, a system of deciding whether or not things should be sent on to be processed further or returned to the customer (Agrawal et al., 2015).

Collection After an acquisition is made, the products are collected and sent to other locations for further processing (Banihashemi et al., 2019). Manufacturers collecting from customers directly, manufacturers collecting returned products through merchants, and manufacturers collecting products through third-party logistics are the three types of collection methods classified (Pokharel & Mutha, 2009; Qiao & Wu, 2021; Ramadani et al., 2019). Cost considerations and data volume must be taken into account when making a collection strategy choice (Panigrahi, Kar, Fen, Hoe & Wong, 2018; Peña-Montoya, Bouzon, Torres-Lozada & Vidal-Holguin, 2020; Phochanikorn, Tan & Chen, 2020; Atasu, Toktay & Van Wassenhove, 2013). It is crucial that RL's design incorporate the selection of collecting centres and recovery facilities for optimal performance (Pochampally & Gupta, 2004).

Inspection and Sorting. Following collecting, goods undergo inspection and classification. Product returns can have a wide range of quality and condition depending on the source (Manufacturing, Distribution, or the Customer) (Nunes, Mahler & Valle, 2009; Nylund, 2012; Osazefua, 2019; Guide et al., 2003). Consequently, individual product inspections are required prior to grouping products for final disposition (Agrawal et al., 2015). Disposition. After the products have been inspected and categorised, the following step is to decide how to dispose of them. The RL process relies heavily on product disposal (Prahinski & Kocabasoglu, 2006). Reuse, repair, remanufacturing, recycling, and disposal are all examples of popular disposal pathways (Banihashemi et al., 2019; de Brito, Flapper & Dekker, 2002; Fleischmann et al., 1997; A. Mutha & Pokharel, 2009; Thierry et al., 1995).

Research on reverse logistics is gaining momentum as a result of the growing environmental consciousness as well as the potential sustainability benefits in the business environment (Agrawal et al., 2015; Al-Awamleh et al., 2022; Mageto, 2022). Businesses are under pressure due to regulatory requirements, economic, proper management for the retention of value from returns, competitiveness, returns policy, empowered customer and environmental protection (Agrawal et al., 2015; Al-Awamleh et al., 2022; Mageto, 2022; Rajagopal et al., 2015). This causes firms to develop elaborate reverse logistics system to ensure efficient flow of goods from the point of consumption to origin to reuse, recycle, repair,recalls, remanufacture, refurbish, recover, return, repackage, redistribute and proper disposal (Monnet, 2008; Agrawal et al., 2015; Al-Awamleh et al., 2022; Mageto, 2022). The implementation of RL give rise to environmental protection through the selection of biodegradable materials for packaging, also enabling reuse, recycle, repair, refuse, remanufacture, refurbish, recover, return, recondition, repackage, redistribute and proper disposal (Rajagopal et al., 2015; Agrawal et al., 2015; Al-Awamleh et al., 2022; Fernando, Shaharudin & Abideen, 2022; Mageto, 2022).

Reuse involves very minimal inspection, cleaning, as well as maintenance are all that is necessary for reuse (Fleischmann et al., 2000) and does not necessitate disassembly, reprocessing, or reassembly (Mirzaei et al., 2016; Mori, Tsunashima, Kojima, Matsumoto & Mizuma, 2010; Banihashemi et al., 2019). When compared to alternative possibilities, this procedure involves less effort (Fleischmann et al., 2000). Repair refers to maintenance, servicing and reconditioning of consumer goods before returning them to customers (Banihashemi et al., 2019; Fleischmann et al., 2000).

Remanufacturing is linked to the recycling of valuable components. In this context, replacement refers to the act of swapping out worn or broken components for brand-new or previously used components (Mugambi & Karugu, 2017 Mutingi, 2014; Naldi, Nordqvist, Sjöberg & Wiklund, 2007; Banihashemi et al., 2019). It is by this method that the integrity of the original product materials is preserved while also allowing for their continued use (Eltayeb et al., 2011). Products that have been remanufactured are reintroduced to the market (Banihashemi et al., 2019). There are a variety of options for companies looking to dispose of their old inventory, including selling it at a discount to make room for new products, selling it on the secondary market, or giving it to a good cause (Amjad, Rani & Sa'atar, 2020; Banihashemi et al., 2019).

Recycling materials from low-value products can be recovered through recycling procedures. All traces of the original product's materials have been erased, along with its intended purpose (Banihashemi et al., 2019; Khor, Udin, Ramayah & Hazen, 2016). A product or component is considered recyclable if it may be repurposed for use in a different product or subassembly. Products and parts that are disposed of are either incinerated or sent to a landfill (Martins et al.,

2022; Banihashemi et al., 2019). When other means of disposal are ineffective, such as reselling or recycling, disposal may be an option (Banihashemi et al., 2019; Khor et al., 2016).

Returns is also an important factor in reverse logistics which represents the company's ability to take back products from the end (customers) who are either expecting refunds, store credit or exchanges (Mageto, 2022). Repackaging is the other method in reverse logistics recommendable when refurbishing, reselling or repairing of products which can be sent to various different markets than the already existing one (Al-Awamleh et al., 2022; Abdallah & Al-Ghwayeen, 2019). Under such circumstance firms can manage to reduce the risks related to warranty claims as well as product liability issues emanating from potential misuse.

Agricultural entrepreneurial marketing (AEM)

Firms that seek out chances in volatile markets, frequently with limited means, are said to be engaging in entrepreneurial marketing (Edwina & Wahdiniwaty, 2020; Hacioglu, Eren, Eren & Celikkan, 2012; Hills & Hultman, 2011; Jones & Rowley, 2011). Pro-activeness, opportunity focus, calculated risk-taking and innovation, customer intensity, resource leveraging, and value creation are some of the defining characteristics of resource entrepreneurial marketing, which Morris, Schindehutte and LaForge (2002) define as an orientation of an organisation with seven underlying dimensions. A conceptual framework for understanding farm-based entrepreneurship through entrepreneurial marketing. Many scholars have claimed that agricultural entrepreneurial marketing (AEM) techniques are more co-creative and proactive than the typical marketing strategies of large firms and marketing managers (Gaddefors & Anderson, 2008; Haden, Kernek & Toombs, 2016; Kraus, Filser, Eggers, Hills & Hultman, 2012; Montiel-Campos, 2018; Solé, 2013; Morris et al., 2002; Sadiku-Dushi, Dana & Ramadani, 2019; Shuremo, Illés & Dunay, 2021). When local small business managers join new non-local markets, they frequently lack experience (Hersleth, Kubberød & Gonera, 2022) and have limited awareness of existing market circumstances; nonetheless, they can create a market by utilising locally obtained resources (Sarasvathy, 2001; Sarasvathy & Dew, 2005). This research investigated how farm-based entrepreneurs leverage their personal resources to develop local and non-local market channels (Mirzaei, Micheels & Boecker, 2016). According to Zontanos and Anderson (2004), successful marketing in small businesses is dependant on the actions and daily interactions of the founding management. Scholars have subsequently questioned how the 4 Ps approach (Porter, 1980) connects to and resonates with entrepreneurs (Gaddefors & Anderson, 2008; Ismail et al., 2018; Hersleth et al., 2022; Mugambi & Karugu, 2017).

Different perspectives and definitions of the EM idea have emerged as a result of the options afforded by entrepreneurial marketing (Edwina & Wahdiniwaty, 2020). Research into the marketing practices of small and medium-sized enterprises (SMEs) has provided one major line of enquiry (Hersleth et al., 2022). There was a need to establish a different kind of marketing model that could be used by both large and small businesses (because small businesses are not just scaled-down replicas of their larger counterparts;). This line of enquiry has added to the entrepreneurial marketing environment by suggesting that the strategies advocated in the literature for large corporations may not be the best fit for SMEs (Kraus et al., 2012). The psychology of startup founders is the subject of another growing field of marketing study (Hills & Hultman, 2011). This school of thought has settled on the EM as a more compelling option for explaining the marketing strategies of startups with few resources but high levels of entrepreneurial spirit (Sadiku-Dushi et al., 2019). The focus of studies has shifted from startups to major corporations as a result. According to the research, every business, no matter how big or little, can benefit from an entrepreneur's approach to marketing (Hisrich & Ramadani, 2018).

Different scholars have made various attempts to define the idea of EM as a result of the proliferation of EM-related research areas (Hersleth et al., 2022). Therefore, there are a wide variety of definitions, including those that focus specifically on marketing in small businesses (Hill & Wright, 2000), those that apply to businesses of all sizes and ages (Morris et al., 2002), and those that place an emphasis on value creation and innovation in EM (Maheswari, Yudoko, Adhiutama & Agustina, 2020; Makaleng & Hove-Sibanda, 2022). All EM definitions share a common thread, however: they incorporate aspects of both marketing and entrepreneurship (Hersleth et al., 2022). EM can be viewed as proactive identification and exploitation of chances for attracting and retaining lucrative consumers through innovative approaches to risk management, resource leveraging, and value generation (Hersleth et al., 2022). Considering the variability of both entrepreneurship and marketing, as well as the fact that the field of EM is founded at their junction, a universally agreed definition of EM is elusive (Edwina & Wahdiniwaty, 2020; Mugambi & Karugu, 2017; Sadiku-Dushi et al., 2019).

Operational efficiency (OE)

Peter Drucker defines efficiency as doing the right things (Drucker, 1963). A number of studies have highlighted the role that efficiency plays in determining a company's long-term success and financial viability. There is a strong correlation between a company's overall efficiency and performance (Imhanzenobe, 2019). It is the optimal use of a company's resources that constitutes operational efficiency (Gong, Liu & Zhu, 2019; Imhanzenobe, 2019). It is crucial for a company's success and survival that they maximise output per unit of input (Imhanzenobe, 2019). Successful competitive strategies, according to Michael Porter, are centred on lowering costs and increasing product differentiation (Porter, 1989). Cost leadership initiatives are predicated on efficient operations. Whoever can produce equivalent goods or services at the lowest cost is the cost leader in that industry (Gong et al., 2019; Job et al., 2020). This necessitates that they maintain a predetermined level of output with a minimum of effort. The cost leader has a significant edge over the competition because he can opt to lower his price to the point where he is still profitable while capturing a larger part of the market (Gong et al., 2019; Imhanzenobe, 2019). When profits drop below a particular threshold, some competitors may be forced to shut down Gong et al., 2019). It's a matter of surrender or futility (i.e. reduce prices or quit). Many different metrics, such as employee growth, operating expenses, account receivables turnover, inventory turnover, and asset turnover, have been used to assess sustainable operational efficiency in the literature (Gong et al., 2019).

Operational efficiency includes operational excellence, economic viability in operational excellence and sustainability of the environment in operational excellence. This is discussed in the paragraphs which follow:

To achieve and maintain excellence, one must focus on both the process and the end result. Operational refers to the production and distribution of a product or the completion of a certain task, while excellence refers to the achievement of that aim (Job et al., 2020; Liu, Wu, Zhong & Liu, 2020). Further, operational excellence is linked to maximising productivity across all available industry parameters (Gong et al., 2019; Henríquez-Machado, Muñoz-Villamizar & Santos, 2021). Sustainable performance (including dealing with people and resources effectively to enable corporate growth) is linked to operating performance (including measures of expense, quality, and resilience) (Imhanzenobe, 2019).

Operational excellence develops interactions between employees and customers and is concerned with both manufacturing processes and waste reduction in order to maximise customer value (Henríquez-Machado et al., 2021). Management that prioritises operational excellence results in a more stable production system, which in turn

benefits customers by providing them with products and services that are priced fairly (Job et al., 2020; Kabonga, Zvokuomba, Nyagadza & Dube, 2021). The three facets of sustainability (social, environmental, and economic) must be examined in depth if operational excellence in the direction of sustainable practices in industries is to be achieved Gong et al., 2019). The social component of sustainable operational excellence contributes to the consolidation and acceleration of company operations (Henríquez-Machado et al., 2021). To achieve economic benefits and profit, industries exist (Imhanzenobe, 2019). When it comes to the bottom line, sustainable operational excellence is only possible if it has a positive financial impact, but this should not come at the expense of the environment or society as a whole (Henríquez-Machado et al., 2021). Negative environmental outcomes from operational excellence decisions must be eliminated, regardless of how lucrative they may be for the industry as a whole (Imhanzenobe, 2019).

Given that economic sustainability is defined as the capacity of an economic process to replicate itself, to maintain its capacity for replication, and to maintain its structure, it follows that a sustainable economy is predicated on the proper application of the instruments required to optimise economic processes, thus contributing to operational excellence (Gong et al., 2019; Henríquez-Machado et al., 2021). Six sigma, which is used to identify and correct errors and eliminate defects from a process and improve the quality of a manufacturing process, and lean manufacturing, which helps manufacturers cut costs without sacrificing quality and waste, are just two examples of the types of tools that are central to operational excellence's pursuit of profit in a sustainable economic environment (Henríquez-Machado et al., 2021).

All of a company's product and service offerings are underpinned by business decisions that strive for operational excellence (Gong et al., 2019; Nyagadza, Kadembo & Makasi, 2020). The manufacturing of a product or service entails several steps and activities, some of which have an adverse effect on the natural world. In light of this, it is clear that operational excellence can only be maintained in the long-term if decisions and actions are made with environmental preservation in mind (Henríquez-Machado et al., 2021). Because environmental sustainability seeks to conserve natural resources, human surroundings, and overall ecosystems without compromising human development goals, it is relevant to operational excellence (Gong et al., 2019). If operational excellence decisions produce highly profitable results but have unfavourable effects on the environment, they will be abandoned (Henríquez-Machado et al., 2021). If a process cannot be maintained indefinitely without negatively impacting the environment, it should be changed (Maheswari, Yudoko, Adhiutama & Agustina, 2020; Makaleng & Hove-Sibanda, 2022). To meet these problems, many businesses around the world have struggled. Some businesses have started setting aside money specifically for environmental causes like cutting down on carbon emissions. Any attempt to model operational excellence without including this effect is doomed to failure (Gong et al., 2019; Henríquez-Machado et al., 2021).

Sustainable competitive advantage (SCA)

The degree to which one has a competitive edge can be directly correlated with how well they perform. Sustaining a competitive advantage is thought to result in increased productivity (Asante, 2018; Economou & Chatzikonstantinou, 2009; Keong & Dastane, 2019). There is a correlation between a company's ability to maintain a competitive advantage and its financial performance (Bowen et al., 2004; Fahy, Hooley, Beracs, Fonfara & Gabrijan, 2003; Morgan, Rime & Strahan, 2004; Ray, Barney & Muhanna, 2004; Wiklund et al., 2003).

Competitive advantage, as defined by Barney (1991), is when one company uses a value-creating strategy that no other competitors are using at the same time. He claims that a company has a sustainable competitive advantage if it is pursuing a value creation strategy that is unique from that pursued by any of its rivals, both current and potential, and if those rivals lack the resources necessary to replicate the strategy's success (Asante, 2018; Huang, Dyerson, Wu & Harindranath, 2015; Job et al., 2020; Keong & Dastane, 2019; Srivastava, Franklin & Martinette, 2013). amongst the many possible answers, Barney (1991) believes that the sustenance of a firm's competitive edge depends on the possibility that it will be duplicated by other competitors in the industry. Following Lippman and Rumelt (1982), a competitive advantage is sustained only if it survives after efforts to reproduce it have finished (Barney, 1991).

In theory, the notion of prolonged competitive advantage has many benefits, including sidestepping the difficulty of deciding how many years must pass before businesses in different industries may claim to have enjoyed sustained competitive advantages (Asante, 2018; Huang et al., 2015; Srivastava et al., 2013). Empirically, sustained competitive advantages, on average, may last a long period of calendar time. The ability of current and potential competitors to replicate that technique is what makes a competitive advantage sustainable, not the passage of time per se (Barney, 1991). Lastly, that a competitive advantage is sustained is not signal that it will last forever (Huang et al., 2015; Keong & Dastane, 2019; Srivastava et al., 2013). However, this does not guarantee that it will not be lost to the market due to the efforts of copycat companies (Barney, 1991). Source of sustained competitive advantage for a company may no longer be so as a result of unexpected shifts in the industry's economic structure (Job et al., 2020).

There are doubts about the viability and usefulness of conventional, unchanging theories of strategy in light of the current unstable state of the economic world. Newer schools of thought in strategic management stress the need to identify and build upon either a sustainable competitive advantage or a series of transient advantages (Ruhli, 1997). If two businesses serve the same customers and operate in the same market, the one that increases its productivity will have an advantage over the other (Grant, 1998; Asante, 2018). Recent works in economics and strategic management reveal three competing theoretical frameworks for understanding the sustained competitive advantage paradigm: the neoclassical, structural, and dynamic schools (Maheswari, Yudoko, Adhiutama & Agustina, 2020; Makaleng & Hove-Sibanda, 2022). That's because, as proponents of neoclassical economics like to point out, in a perfectly competitive market, the forces of supply and demand eventually work to wipe out any kind of competitive advantage or superior performance, and with it, any chance of earning profits above and beyond what would be considered normal (Chen, 2015). Implementation of green supply chain management practices (GSCM) gives companies a sustainable competitive advantage (Chin, Tat, Sulaiman & Muhamad Zainon, 2015). GSCM practices plays a critical role in ensuring sustainability performance which include environmental, social and economic performance.

Conversely, sustained competitive advantage is recognised by the structural school of thought. Sustainable competitive advantage and the corresponding advanced organisational performance is seen as not only possible but also acceptable by proponents of the industrial organisation and 'market-led view' (Porter, 1980) and the resource-based approach (Barney, 1991). Furthermore, the 'market-led view' to business level strategy suggests that firms and organisations may capture and keep competitive advantage by identifying and exploiting opportunities in existing and emerging markets, in niches within markets, and also by aligning the firm's strategy to the most efficient use of the firm's basic resources and capabilities (i.e., core competencies) (Asante, 2018; Huang et al., 2015). For a company's advantages to last over time, the scarce resources it relies on must be original, rare, and impossible to replicate. Assuming that environmental changes stabilise and become more predictable, a firm's distinctive competences and strategic position can be maintained if they are both durable and inimitable (Job et al., 2020).

All of these features have strong associations with the term quality, suggesting that quality can become a significant source of competitive advantage for all of those firms and organisations that are fighting for survival in the new hypercompetitive conditions (Guarnieri, Cerqueira-Streit & Batista, 2020). Twenty businesses, including the best scorers in the Baldrige Award Competition in 1988 and 1989, were studied by the American General Accounting Office to determine the impact of quality improvements on financial outcomes. Most of these businesses were able to increase their client happiness, boost their competitiveness, and reap other great benefits for their organisations (US General Accounting Office, 1991; Wheelwright 1989). Therefore, in today's extra hard economic environment, it is fairly accepted amongst enterprises and organisations that quality improvements are a basic source of obtaining competitive advantage and prevailing over competitors (Job et al., 2020).

Hypotheses

The aim of using this literature organisation approach is to produce highest degree of thorough analysis, hypothesis development and subsequent conceptual model development, that will be tested in future research endeavours. The hypotheses developed and proposed from the current study's systematic literature review and meta-analysis can be tested in the future research executions:

H_1: Reuse green reverse logistics technology (GRLT) positively impact sustainable operational efficiency of agricultural inputs entrepreneurial marketing firms.

H_2: Repair green reverse logistics technology (GRLT) positively impact sustainable operational efficiency of agricultural inputs entrepreneurial marketing firms.

H_3: Remanufacture green reverse logistics technology (GRLT) positively impact sustainable operational efficiency of agricultural inputs entrepreneurial marketing firms.

H_4: Recycle green reverse logistics technology (GRLT) positively impact sustainable operational efficiency of agricultural inputs entrepreneurial marketing firms.

H_5: Operational efficiency (OE) positively impact sustainable competitive advantage (SCA) of agricultural inputs entrepreneurial marketing (AEM) firms.

Discussion and conclusion

With the perspective of the stated hypotheses, the modelling conceptual framework in Fig. 2 shows the antecedents of GRLT such as Reuse (X_1), Repair (X_2), Remanufacture (X_3), and Recycle (X_4), directly influence Operational Efficiency (OE) (M_1) and Sustainable Competitive Advantage (SCA) (Y_1) of the agricultural inputs entrepreneurial marketing firms. During the process of validating the structural modelling framework and its proposed hypotheses, future researchers need to make verifications of the absence of endogeneity through the simultaneity between Y_1 and X_1. If there is endogeneity on X_1 then an instrumental factor should be applied to have a solution for the problem under study.

Further to this, suppliers and other supply chain participants receive returned goods, materials, and sub-assemblies for remanufacturing (Beamon, 1999). The basic design of a product must account for disassembly processes. Having suppliers on board is crucial for creating environmentally friendly products (Wu & Dunn, 1995). A company's environmental impact can only be reduced by taking into account the entire system in which it operates (Andrushchak, 2018; Beamon, 1999; Richnák & Gubová, 2021). For widespread greening efforts, the green supply chain is the perfect emphasis since it reflects this comprehensive, systems-level perspective. The importance of constructing decision frameworks for reverse logistics processes for effective product take-back, reuse, and recycling of specific components and materials of end-of-life structures. The research also suggests effective choice approaches for reverse logistics vehicle routing (Lee & Lam, 2012; Kassem & Chen, 2012). Consequently, many experts in the field have proposed and executed several approaches to making decisions (Job et al., 2020). Recently, Chanintrakul, Coronado Mondragon, Lalwani and Wong (2009) provided a state-of-the-art review of the design of reverse logistics networks.

A more complicated and dynamic type of competition has emerged in the new global market as a result of the dynamic capabilities' perspective (Eisenhardt & Martin, 2000) and so-called hyper competition, according to the last school of thought. Hyper-competition, according to D'Aveni (1995), results from the interplay between global and inventive rivals and the dynamics of strategic management. Austrian economics, or evolutionary economics, suggests that competitive advantages cannot be sustained in today's fast-paced, highly competitive, and wildly unpredictable business environment. D'Aveni (1999); Rindova and Kotha (2001), and others have argued that in highly competitive market conditions, enduring competitive advantages do not stem from a well-formulated single strategy but rather from strategy agility, or the ability to make rapid and continuous adjustments to one's strategies faster than competitors in order to create a continuous flow of innovative advantages (Kazancoglu, Ekinci, Mangla, Sezer & Kayikci, 2021). The third dynamic school of thought holds that any competitive advantage that successfully exploits market imperfections will be fleeting, allowing superior-performing firms and organisations to sustain themselves by focusing solely on such advantages (Guarnieri, Cerqueira-Streit & Batista, 2020). Gaining and maintaining a competitive advantage is an important part of any successful business strategy, as it may lead to increased earnings and new opportunities. Wheelwright (1989) argues that a company's ability to do the following things critically contributes to its competitive advantage: concentrate on client demands, improve business performance, be durable, long-lasting, and imitable by rivals, be founded on firms' fundamental competencies, encourage a continuous improvement environment and provide leadership and motivation for the entire organisation (Asante, 2018; Keong & Dastane, 2019).

Theoretical implications

The study adds to theoretical literature development by extending knowledge on the RLM theoretical modelling framework since there is paucity of research that have directly applied the same model in agricultural inputs entrepreneurial marketing firms' sustainable operational efficiency and competitive advantage. This study builds theoretical groundwork and significantly contribute to literature for future studies for both locally and globally. It presents research opportunities to guide future theoretical and methodological developments relating to GRLT, operational efficiency and sustainable competitive advantage of other sectors. The conceptual model includes GRLT (reuse, recycle, remanufacture and repair), OE and SCA which forms a basis for advancing theoretical knowledge in the field of reverse logistics and closely related fields. Green reverse logistics technology (GRLT) positively impact operational efficiency and sustainable competitive advantage (SCA) of agricultural inputs entrepreneurial marketing firms. The study recognizes GRLT (reusing, recycling, remanufacturing and repairing) in relation to operational efficiency and sustainable competitive advantage (SCA) of agricultural inputs entrepreneurial marketing firms which can be extended to other sectors like the automobile, electronic and the pharmaceutical ones. Even though reverse logistics has been getting a lot of press as of late, it is only one part of the supply chain and hence not the final destination for environmental improvement (Eltayeb et al., 2011; Richnák & Gubová, 2021). The concept of greening encompasses more than just the reverse flow of products (Andrushchak, 2018; Richnák & Gubová, 2021). Greening, for instance, can begin with the supply chain, beginning with the conditions of production

and continuing through the steps of distribution, storage, and finally usage. As a result, the method can be implemented in a broader context outside of the original organisation (Andrushchak, 2018; Richnák & Gubová, 2021). In addition, there are other ways in which reverse logistics can be put into practice, beginning with the initial collection of goods and continuing through the return transportation, disassembly, and final reuse of the gathered components (Andrushchak, 2018; Banihashemi et al., 2019). However, recycled materials could be used again in the manufacturing process after being reduced to shreds (Job et al., 2020).

Practical policy implications

Practically, the study enhances the need for adoption of contemporary technologies to solve the current challenges facing agricultural inputs entrepreneurial marketing firms' sustainable operational efficiency and competitive advantage in the marginalised areas, not only in developing and emerging economies, but also dotted around the world. The conceptual framework can help management and decision makers to understand technologies can drive reverse logistics and how it impacts operational efficiency and sustainable competitive advantage. Reverse logistics function needs to be treated as a strategic integral part of the supply chain by ensuring strong institutional influence. Systems thinking is an important tool in having a clear view of the subject matter. By gaining operational efficiency through strategic management of reverse logistics (RL) can result in the improvement of the agricultural entrepreneurial marketing firm's competitive position. Operational efficiency lead to improved competitive advantage of a firm. In many agricultural inputs industries RL costs tend to exceed the costs of production. Lack of an integrated supply chain strategy may in the long-term influence the agricultural entrepreneurial marketing firm's competitiveness. Firms can achieve competitiveness through probable defining of the relationship that exist between GRLT and operational efficiency and sustainable competitive advantage (SCA) of agricultural inputs entrepreneurial marketing firms. Establishing of such relationships will need to see firms investing in appropriate technologies and systems that promote efficiency. Such technologies can help in improving reusing, recycling, remanufacturing and repairing which in turn improve the firm's competitiveness. Implementation of this can also call for strategic partnerships in the event that the firm lacks capacity or limited resources to execute GRLT. Managers need to conceive formal GRLT policies and strategies achieve benefits that lead to operational efficiency and competitive advantage. Furthermore, it also presents a mapping between technologies and reverse logistics processes for firms. Ensuring technologies in reverse logistics is likely to promote operational efficiency and sustainable competitive advantage. This research can also help practitioners to redesign their reverse logistics systems to that incorporate other reverse logistics paradigms such as reuse, refuse, refurbish, recover, return, recondition, repackage, redistribute and proper disposal.

Limitations

The study has limitations which may affect the generalisability of the results since they can only be applied testing the validity and reliability of the developed conceptual model.

Agenda for future research directions

The study contributes to the conceptual development, theoretical and practical policy future directions applicable to any agricultural inputs entrepreneurial marketing firms. Further to this, the developed conceptual model can be tested to prove its validity and reliability in future similar studies, using alternative methodologies. Future researches can examine GRLT impact in different contexts, industries and countries on the basis of cross validation of the model. This study can be extended through the involvement of reverse logistics capabilities incorporating the resource advantage theory. Future researchers can consider operationalising variables hypothesised relationships.

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All authors contributed equally in the development of the article.

Declaration of Competing Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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