Journal of Rural Studies 84 (2021) 31–44

Contents lists available at ScienceDirect

Journal of Rural Studies

journal homepage: www.elsevier.com/locate/jrurstud

Sensemaking and the influencing factors on farmer decision-making

Michael T. Hayden [a,*], Ruth Mattimoe [b], Lisa Jack [c]

[a] School of Business, Maynooth University, Maynooth, Co. Kildare, Ireland
[b] DCU Business School, Dublin City University, Glasnevin, Dublin 9, Ireland
[c] Portsmouth Business School, Faculty of Business and Law, University of Portsmouth, Portland Street, Portsmouth, PO1 3DE, United Kingdom

ARTICLE INFO

Keywords:
Strategic decision-making
Farm expansion decisions
Financial and non-financial influencing factors
Farmer decision-making
Sensemaking

ABSTRACT

The budget for the Common Agricultural Policy (CAP) is €365bn (European Commission, 2018) for 2021–2027, with the majority allocated to farmers through direct payments. Given the economic vulnerability of many farm enterprises, and the concern about the sustainability of food supply for a growing worldwide population, these payments are provided to encourage food production. Despite this economic vulnerability, many farmers do not appear to run their business with the sole intention of profit maximisation. This paper explores various financial and non-financial influencing factors on the strategic farm expansion decision-making process of farmers with the aim of assisting policymakers and farm advisors to develop a deeper understanding of that process. As a result, agricultural policy may be more effectively formulated and advisory services to farmers may be improved. Semi-structured interviews were undertaken with 27 farmers who have undertaken strategic farm expansion decisions. Subsequently, the interview findings were presented to a focus group to probe them in more detail. A wide range of financial and non-financial influencing factors on the strategic farm expansion decision-making process of farmers emerge. Analysis of the influencing factors by the specific type of farm expansion decision undertaken and by farm type provides further insights. It is proposed that these influencing factors act as a *cue* which trigger a sensebreaking activity and cause the farmer to enter a process of sensemaking, culminating in a strategic farm expansion decision being undertaken.

1. Introduction

Farmer decision-making takes place in a dynamic and complex environment where farmers are exposed to economic, political, social and ecological change. Volatile market forces where prices of both inputs and outputs fluctuate coupled with uncertain weather conditions, contributes to this complexity. The rapidly changing role of technology in farm management is another factor that adds to these dynamic circumstances. Despite this complexity, Irish farmers have invested a significant amount of capital in farm expansion decisions in the past 20 years to pursue market-driven, innovative and sustainable strategies.

Some of this investment has been supported by direct payments under the Common Agricultural Policy (CAP). The budget for CAP is €365bn for 2021–2027 (European Commission, 2018), with the majority allocated to farm enterprises through direct payments. There are multiple reasons for such payments, given the economic vulnerability of many farm enterprises (Gutter and Saleem, 2005; Pretty et al., 2005; Brown, 2009), but the primary reason is to support farmers and improve agricultural productivity to ensure a stable supply of affordable food. Despite this economic vulnerability, many farmers do not appear to run their business with the sole intention of profit maximisation; non-financial influences are often equally important. However, farming is very diverse and not all farmers are influenced in the same way when faced with change. Farmer decision-making models have been primarily developed on the assumption that farmers focus on maximising production and profits (Wallace and Moss, 2002). However, Austin et al. (1996) highlight that farmers, in many different countries and cultures, do not invariably run their farms with just financial objectives in mind.

We argue the importance of policymakers gaining a deeper understanding of the decision-making process of farmers, so that effective policies can be formulated to encourage farmers to generate a sustainable food supply for a growing worldwide population. Perhaps, the recent COVID-19 pandemic highlights the important role of farmers and food producers in society, as when many economies shut down with most industries ceasing operations, food producers and farm enterprises were deemed essential services. Pietola and Lansink (2001) claim that effective agricultural policy requires understanding of what triggers farmers' behaviour; this paper assists in developing that understanding.

* Corresponding author.
E-mail address: michael.hayden@mu.ie (M.T. Hayden).

https://doi.org/10.1016/j.jrurstud.2021.03.007
Received 16 April 2020; Received in revised form 5 February 2021; Accepted 11 March 2021
Available online 25 March 2021

It is also important for farm advisors (agricultural consultants and rural accountants) to develop their understanding of farmer decision-making so that they can effectively advise farmers on how best to generate sustainable farm enterprises. A deeper understanding of that process may assist such advisors to tailor their services to more effectively meet the needs of their farm clients.

Given the concern about the sustainability of food supply, the lack of focus on the financial decision-making process of farmers, by academics both in the farm management and farmer decision-making literature, is surprising (Jack and Jones, 2007). Due to the sparse literature, Ndemewah et al. (2019) calls for more research on farm enterprises, as this sector is more influenced by government policy than most others. Fountas et al. (2006) classify farmers' decisions as strategic, tactical, and operational. This paper focuses on strategic decision-making which is less covered by the literature, specifically, strategic farm expansion decisions including buildings investment, land purchase, machinery investment, land lease, livestock investment and off-farm investments, are explored. Much of the prior literature profiles non-financial influencing factors on specific farmer decision-making situations, with little emphasis on financial and non-financial influencing factors together impacting on the strategic farm expansion decisions undertaken by farmers. Furthermore, the dearth of research in an Irish context is surprising given the importance of the agricultural industry to the Irish economy and despite Irish farmers having invested a significant amount of capital in the past 20 years on strategic farm expansion decisions.

While there is a significant body of literature on farmer-decision making, it is quite disjointed, covering a wide spectrum of agricultural economics, rural studies, agricultural science and farm management literature and to a much lesser extent, the financial management literature. The authors of this paper are a group of accounting researchers and argue that the study of financial management (FM), of which decision-making is an integral part, is important and warrants review (Callado and Jack, 2017). Hilkens et al. (2018) explores how relations between farmers and advisors around FM are shaped. They maintain that due to the sensitivity of the topic, and the low level of interest in FM, most farmers do not seek to acquire financial advice. In an Irish context, there have been substantial efforts by advisory services in the past decade to prioritise FM advice to farmers, yet there still appears to be quite low levels of FM conducted by farmers.

In management accounting, the influences on a particular decision are quite often regarded as being financial or non-financial. Financial factors relate to traditional economic theory which suggests that people make decisions to maximise utility, where profit is often used as a substitute for utility, as real utility is so hard to measure (Edwards--Jones, 2006). The assumption that farmers are rational profit maximisers is central to many agricultural models (Wallace and Moss, 2002), which assumes that farmers conduct their farm management activities and make decisions in a manner which they hope will increase the profitability of their farm enterprise. Non-financial factors relate to the behavioural approach (Burton, 2004); a key feature for its emergence was the introduction of Simon (1957) 'satisficing' concept, i.e. the acknowledgement that people do not necessarily indulge in economically optimal decision-making, but instead may optimise social, intrinsic and/or expressive goals. The management accounting perspective of categorising the influencing factors on farmer decision-making as being either financial or non-financial is not explicitly evident in the prior rural studies literature.

Here, sensemaking as developed by Weick (1995) and explored by Huzzard (2004), is adopted to achieve a deeper understanding of the influencing factors on farmer decision-making. These have strong connections with the properties of sensemaking established by Weick (1995). Also, it appears that the influencing factors may act as a *cue* which triggers a sensebreaking activity (Huzzard, 2004) and cause the farmer to enter a sensemaking process.

The objective of this paper is to profile the various financial and non-financial influencing factors on the strategic farm expansion decision-making process of farmers. This will assist policymakers and farm advisors (agricultural consultants and rural accountants) to develop a deeper understanding of that process and thereby help contribute to the development of sustainable farm enterprises. The analysis here is tightly focussed on the sensemaking activities of the farmers themselves, and not on the role of advisors, which were analysed in a separate study. As farmers generally find themselves in the position of price takers (Sexton and Xia, 2018), the impact of supply chains, contracts and market conditions are not explored in the farm expansion decisions explored in this study.

2. Literature review

The purpose of this literature review is to provide an overview of the prior literature surrounding the influencing factors on farmer decision-making. However, a wide array of disciplines have explored farmer decision-making. Therefore, a narrative review of the literature was undertaken to identify key influences on farmer decision-making and to explore the key contexts in which the influencing factors of farmer decision-making have been studied. The literature review process was steered by key words identified as relevant to the research question and by the expert knowledge of the authors. We began by reviewing the influencing factors on farmer decision-making generally, and subsequently focused more specifically on exploring the influencing factors on strategic decision-making as identified in the prior literature. During this narrative review, keywords were used in searching the peer-reviewed literature in search engines and databases. Business Source Complete and Scopus were the two primary comprehensive databases used with no specific criteria applied to geography or timeframe. Examples of key words include: "influencing factors", "farmer decision-making", "strategic decision-making in agriculture", "farm expansion decisions" and "financial decision-making in agriculture". We acknowledge that this type of narrative review creates a limitation of being focused on literature in the English language. A substantial literature surrounding the goals and values of farmers exists and these appear to be one of the primary influencing factors on farmer decision-making. Otherwise, the prior literature on the influencing factors on farmer decision-making concentrates on specific decision-making contexts, namely: farm household decision-making and succession planning; technology, agricultural innovations and policy adoption; participation in agri-environmental schemes; and various strategic farm expansion decisions. The literature review narrative is structured around these identified factors.

2.1. The influence of goals and values in farmer decision-making

There is a body of literature which describes the goals and values of farmers, closely linking these with their attitudes and behaviours, collectively described as the "farmer's mentality". A seminal study by Willock et al. (1999) predicts a range of variables to be considered when evaluating farmer decision-making, including: antecedent variables (originating factors that affect decision-making); mediating variables (factors that intervene between the originating factors and the outcome of the decision) and outcome variables (the behaviours of the farmer). Willock et al. (1999) also document various attitudes, goals and behaviours of farmers, which they consider may affect farmer decision-making (see Appendix A). Alternatively, Gasson (1973) ranks a set of attributes representing farmers' goals for being in business, resulting in four dominant values: (1) economic values (instrumental values) such as maximising profits and expanding the business; (2) social values such as prestige as a farmer and continuing traditions; (3) expressive values such as pride of ownership and meeting a challenge, and (4) intrinsic values such as enjoyment of work and independence. Öhlmér et al. (1998) emphasise that one of the primary goals of farmers is to stay on the farm and improve it for the next generation, while Hansen and Greve (2014) highlight that many farmers feel a duty to take

care of the farm and pass it on to the next generation.

2.2. Farm household decision-making and succession planning

In a number of studies, the make-up of the farm household influences farmer decision-making. Gasson and Errington (1993) note that priorities of farmers at different stages in their life cycle result in different patterns of decision-making and farm development. Edwards-Jones (2006) discusses how factors such as: stage in family life cycle, level of pluriactivity (Kinsella et al., 2000) and the work patterns of the spouse, all influence farmer decision-making. Farming enterprises have a tendency to exhibit characteristics that are specific to farming, and less likely to exist in other sectors, such as the inextricable linkage between business, family and household ownership (SL Jack and Anderson, 2002). Other studies emphasise the role of women in farmer decision-making. Wilkening (1958) maintain that the attainment of both farm and family goals requires joint discussion and consensus on the part of husband and wife. This continues over subsequent decades with McGregor et al. (2001), contending that the success of government policies in affecting the decisions farmers make in respect to participating in such policies, depends to a large extent on the manner by which households, including women, respond to these policy interventions. Farmar-Bowers (2010) agrees that women play an important role in technical and economic aspects of strategic farmer decision-making and suggests that policymakers should develop methods of providing relevant decision-making information to women farmers. Conversely, Carnegie et al. (2020) find that women generally play a leading role in managing day-to-day finances, whereas men lead agricultural decision-making. However, they argue that engaging women in technical learning appears to encourage greater integration of these roles.

Succession planning is an integral component of farm household decision-making (Gasson and Errington, 1993; Stephens, 2012; Conway et al., 2017; Downey et al., 2017; Duesberg et al., 2017; Leonard et al., 2017). Few studies highlight how it influences farmer decision-making, but Öhlmér et al. (1998) show that a strong desire to stay on the farm and improve it for the next generation influences Swedish farmers. O'Donnell et al. (2011) identify succession planning as a key consideration in the future intentions of Irish dairy farmers in the wake of milk quota abolition. Hansen and Greve (2014) suggest that Norwegian farmers feel a duty to pass on their farm to the next generation in a better condition than it was when they took over the farm. However, Conway et al. (2016) acknowledge that many farmers feel that their identity and self-esteem are strongly attributed to their occupation. As a result, they find it difficult to accept the sacrifice of professional and personal identity involved.

2.3. Influencing factors on technology, agricultural innovations and policy adoption

Studying the factors that influence the adoption of new technologies and policies by farmers, Edwards-Jones (2006) identifies a comprehensive set of six influencing factor groups. These are: (1) socio-demographics of the farmer (factors such as: age, education, gender, attitude to risk and personality), (2) psychological make-up of the farmer (factors such as: values, goals, attitudes, behaviours discussed in Section 2.1), (3) the characteristics of the farm household (factors discussed in Section 2.2), (4) structure of the farm business (factors such as: farm type, farm size and debt to assets ratio), (5) the wider social milieu (including the level of extension, information flows, local culture, social capital, the attitude of trusted friends, the policy environment and, the structure and impact of a range of institutions), (6) the characteristics of the innovation to be adopted (for example, the specific attributes of an agri-environmental scheme).

It follows that *farm type* can be a significant influence in farmer decision-making. The prior literature focuses on dairy farms (Hansson and Ferguson, 2011; O'Donnell et al., 2011; McDonald et al., 2013) with little research on other farm types. *Farm size* is also an understandable influencing factor (Hansson and Ferguson, 2011). Grant and MacNamara (1996) conclude that larger farmers are best able to take advantage of lending opportunities on offer, with a long-term trend towards the development of larger/commercial farming enterprises. In Ireland though, the majority of Irish farms have no farm business-related debt (Dillon et al. 2019).

Howley et al. (2012) find that the cost of using this technology, potential benefits and ease of use, all significantly affect farmers' adoption of innovations. However, they stress that irrespective of any potential economic benefits, some farmers may simply not have the time to implement this technology. In addition, it was found that older farmers were less likely to adopt, noting that it could be that age is capturing the fact that relatively older farmers are on the whole less educated than their younger counterparts. Prokopy et al. (2008) contends that education has a positive association with the adoption of new technologies.

2.4. Influences on participation in agri-environmental schemes

EU policy has a primary focus on environmental conservation with many schemes introduced to encourage farmer participation. Beedell and Rehman (2000) observe that farmers with greater environmental awareness are more influenced by conservation-related concerns and less by farm management concerns, than other farmers. Sutherland (2010) maintains that environmental grants and regulations have a significant impact and acknowledge that Scottish beef and sheep farmers view grant schemes as opportunities to be grasped. Similarly, Wilson and Hart (2000) conclude that economic considerations are the primary driving force for participation in the EU, as schemes tend to fit with existing farm-management plans. Often though, policymakers often fail to appreciate the integrated nature of the relationship between the farm household, the farming system and the environment, leading to lower take-up of government policies and technology (McGregor et al., 2001). Elsewhere, the overarching motivation in the decision to take part in voluntary agri-environment schemes in the UK is the desire to continue the farm and pass it on to the next generation (Ingram et al., 2013).

2.5. Influencing factors on various strategic farm expansion decisions

Few studies have explored the specific issue of what influences farmers to undertake specific types of farm expansion decisions (for example, land purchase or buildings investment). Although Farmar-Bowers (2010) explores the role of women in strategic decision-making; land acquisition is not fully considered. Sutherland (2010) only outlines how environmental grants and regulations influence shed construction and land acquisition. Hansson and Ferguson (2011) explore the influencing factors on Swedish farmers making the strategic decision of developing dairy production. Similar to Edwards-Jones (2006), they group influencing factors into four categories: (1) the decision structure, (2) the farm's business structure, (3) the cognitive structure of the farmer, and (4) the farm's network structure. O'Donnell et al. (2011), in the context of EU milk quota deregulation, identify location (as some regions in Ireland are more suitable to dairy farming than others), quota size (capacity to increase production) and succession planning as important farmer attitudes to expansion. Counterintuitively, Hansen and Greve (2014) show how farmers prioritise terminal values (such as personal, lifestyle, tradition, enjoyment of work) over instrumental values (such as to earn money and produce milk).

Other farmers choose to diversity their operations. Lapple and Rensburg (2011) contend that different groups of farmers in Ireland respond differently to economic and non-economic factors, when considering whether or not to take up organic farming. More farmers were motivated by environmental considerations than financial ones. Sutherland et al. (2012) found that "trigger events" are an accumulation

of experiences, which indicate to farm managers that a major change in farming activities needs to occur and are most likely to be connected to financial imperatives (periods of financial stress) or inter-generational succession. Murray-Prior and Wright (2001) emphasise how Australian sheep farmers respond to "triggers" in major market price changes through strategic decision-making rather than by marginal changes to existing enterprises.

2.6. Synthesis of the influencing factors literature

The prior rural studies literature lacks a management accounting perspective of categorising the influencing factors on farmer decision-making as being either financial or non-financial. Apart from the reference to economic values (financial) by Gasson (1973), most of the prior studies focus primarily on documenting non-financial goals in farming. Similarly, it is evident that the attitudes, goals and behaviours profiled by Willock et al. (1999), are predominately non-financial, with less of an emphasis on financial factors. Table 1 summarises Sections 2.1 to 2.5 showing that while financial factors are present as influencing factors in each context, there appears to be a stronger emphasis on how farmer decision-making is influenced by non-financial factors.

As we move from one context to the next, many of the influencing factors are common to each context. Table 1 also provides a comprehensive and holistic overview of the influencing factors on farmer decision-making discussed in the prior literature. By exploring the literature on influencing factors on farmer decision-making generally, and subsequently focusing more specifically on exploring the influencing factors on strategic farm expansion decisions, connections to sensemaking theory emerge. In particular, "trigger events" described in the prior strategic farm expansion decision-making literature (Murray-Prior and Wright, 2001; Sutherland et al., 2012) connect with sensemaking theory, discussed next.

3. Theoretical framework

Sensemaking can be defined as a process of assigning meaning to events in the environment, by applying stored knowledge, experience, values and beliefs to new situations in an effort to understand them (Weick et al., 2005). It is about people's attempt to understand past, present and future situations and depends on one's understanding of what happened and one's ability to lead future activities (Tillmann and Goddard, 2008). Weick (1995), drawing on Dervin (1983), develops a conceptual analysis of sensemaking, which he argues is a central activity in all organisations:

> To talk about sensemaking is to talk about reality as an ongoing accomplishment that takes form when people make retrospective sense of the situations in which they find themselves and their creations (Weick, 1995, p.15, p.15).

Weick (1995) argues that the central activity in all organisations is 'sensemaking' and contends that members of organisations extract cues to action from the changing environment in which the organisation finds itself. During this time, sense is said to "break", leading to a reflective (sensemaking) process, probing what the status quo is and whether change is necessary in response to these cues. The individual's response to these cues and how they are weighed up will vary and is influenced by their beliefs about their role, previous experiences and underlying values. The action that occurs as a result of these cues will, in turn, change the environment within the organisation and play a part in determining which cues are noticed in the future. This process is circular; Weick (1995, p.43) calls it 'ongoing'.

Weick identifies seven distinguishing characteristics of sensemaking, which set it apart from other explanatory processes such as understanding, interpretation and attribution. Sensemaking is (1) *grounded in identity construction*, (2) *retrospective*, (3) *enactive of sensible environments*, (4) *social*, (5) *ongoing*, (6) *focused on and driven by extracted cues* and (7) *driven by plausibility rather than accuracy* (Weick, 1995). In Appendix B, these seven properties are described, using illustrative quotes of their meaning according to Weick (1995). These properties guide the reflective process by which individuals select particular aspects of the environment to focus on and interpret (Taylor, 1999).

Weick's work (1988), dealing with crisis situations, argues that people do not know what the 'appropriate action' is in a crisis situation (disruptive events) until they take some action and see what happens. Thus, actions determine the situations. He concludes that to sort out a crisis as it unfolds often requires action which simultaneously generates the raw material that is used for sensemaking and affects the unfolding itself (Weick, 1988). If these observations are reflected upon in the context of farmer decision-making, some interesting observations can be made. By substituting the word "crisis" with "a decision event" then, as the process of decision-making unfolds, various influencing factors may guide the farmer in making sense of a situation and enables decision-making. For example, a farmer may be in a crisis situation whereby s/he has a capacity constraint in terms of land or housing for animals and in such a situation, the farmer may make a strategic farm expansion decision (land purchase or buildings investment) to alleviate the problem.

Interestingly, Sandberg and Tsoukas (2015) conduct a critical review of sensemaking theory and highlight the exclusive focus on disruptive episodes at the expense of more mundane forms of sensemaking implicated in routine activities, as one of the primary limitations of sensemaking. They also outline a number of events that trigger sensemaking, including major planned events, which they describe as various forms of deliberate strategic change initiatives.

Furthermore, they highlight some factors influencing sensemaking, including specific context, identity, emotion and language (stories). The critical review by Sandberg and Tsoukas (2015) highlights how sensemaking is an appropriate theory to adopt in this study. Firstly, sensemaking is a suitable lens to explore strategic change. Secondly, Sandberg and Tsoukas (2015) highlight that specific context, identity and emotion influence sensemaking, and the prior literature also relates these issues

Table 1
Overview of the Influencing Factors on Farmer Decision-making Contexts identified in the Literature.

Farm household decision-making and succession planning	Technology, agricultural innovations and policy adoption	Participation in agri-environmental schemes	Strategic Farm Expansion Decisions
Goal preferences Priorities at different stages in life-cycle Level of pluriactivity Work patterns of the spouse The role of women Desire to stay on farm and improve for next generation Identity and self-esteem	Socio-demographic factors Psychological make-up Structure of the farm business Social milieu Characteristics of innovation to be adopted. Cost of using the technology Benefits and ease of use of technology being adopted	Level of environmental awareness Availability of grant schemes to support participation Economic considerations Fit with farm-management/ development plans Relationship between farm household, farming system and the environment Farm succession priorities	Household structure The role of women Succession planning Environmental grants and regulations The business structure Sources and types of information Cognitive structure of the farmer Farmers' network structure Farmer values, both instrumental and terminal values Diversification Financial imperatives

to farmer decision-making. Similarly, Sandberg and Tsoukas (2015) outlines events that trigger sensemaking, including strategic change initiatives. In the literature on farmer decision-making, it seems that major change occurs in farming practices primarily due to "trigger events" (Murray-Prior and Wright, 2001; Sutherland et al., 2012). Thirdly, and perhaps most important, the context of farmer decision-making contributes to overcoming the limitation of sensemaking's narrow focus on disruptive events and crisis situations.

Sensemaking has been applied across various disciplines and in some financial decision-making situations. Boland (1984) emphasises that decision-making does not always take place in a rational and analytical form. He advocates that 'sensemaking assumes management action is a continuous, equivocal stream of experience that can only be understood (or made sense of) when it is viewed in retrospect' (Boland, 1984, p.868). Messner postulates that sensemaking is often implicit and unintentional and that there are occasions for sensemaking in organisations, for example, in the presence of 'ambiguity' and 'uncertainty' (2013, p.7). In the context of this current study, the two latter studies are relevant. Perhaps farmer decision-making can only be understood when it is viewed in retrospect. Furthermore, the presence of ambiguity and uncertainty may often trigger farmer decision-making.

Huzzard's (2004) conceptualisation of sensemaking, sensegiving and learning in a model of organisational change focuses on learning through exploration in projects, rather that learning through exploitation of routine activities. This model of sensemaking, learning and organisational change introduces concepts of sensegiving and sensebreaking (Fig. 1).

The model depicts a cyclical process, as organisations confront change and learn from situations encountered. This continuous process affirms the 'ongoing' property of Weick (1995, p.43). Huzzard states that ' … the learning cycle is triggered by a *cue* received by the permanent[1] organisation that 'breaks sense' and generates sensemaking, leading to the establishment of a new activity – typically a project' (2004, p. 357). This leads to a temporary[2] situation whereby sensegiving activities are undertaken, learning takes place and is fed back into the permanent organisation. This cyclical process continues until another cue presents itself and breaks sense once more, leading to another process of sensemaking. Huzzard (2004) highlights that people require values, priorities and clarity about preferences, rather than more information, to cope in sensebreaking situations. The concepts of sensemaking, sensebreaking and sensegiving all influence or result in decision-making.

According to Huzzard, cues in day-to-day operations (routine action in the permanent organisation) cause *sensebreaking* and trigger the process of *sensemaking* which may result in changes to the organisation (non-routine action in the temporary organisation). In the context of strategic decision-making (which is a non-routine action), the *cues* could be the influencing factors. When a farmer enters a decision-making process (moving from a "permanent situation" to a "temporary situation"), s/he is entering a process of sensemaking. Therefore, if organisational change is re-conceptualised as being enacted through strategic decision-making, then Huzzard's application of sensemaking can be adapted for farmer decision-making.

While a number of authors have applied sensemaking in agriculture (McCown, 2005; Amanor-Boadu, 2007; Magne and Cerf, 2009; Sneddon et al., 2009; Peirano-Vejo, 2012), there are no prior empirical studies of sensemaking in farmer decision-making. Interestingly, both Murray-Prior and Wright (2001) and Sutherland et al. (2012) refer to "triggers" (which are referred to as *cues* in the sensemaking literature) in their studies on strategic change in agriculture, but it was not in the context of sensemaking. In fact, Sutherland et al. (2012) discuss how major changes in farming practice occur in response to "trigger events" and this may set a new course of action. In undertaking these actions, the farm system enters a period of instability while new practices become established. If these new practices successfully achieve anticipated aims, they lead to a further period of path dependency. This process as described by Sutherland et al. (2012) is remarkably similar to the process of sensemaking described by Huzzard (2004) and applied to the research findings in this study.

Sensemaking may occur in times of ambiguity and uncertainty (Boland, 1984), in crisis situations (Weick, 1998), during periods of organisational change (Huzzard, 2004) and in times of strategic change initiatives (Sandberg and Tsoukas, 2015). The application of sensemaking to farmer decision-making in this study adds an additional theoretical perspective, which is not evident in the prior literature, and further develops our understanding about the role of the influencing factors.

Hence, there are three reasons for using sensemaking as a framework in this study. First, many of the influencing factors on strategic farm expansion decisions identified in the literature (see Table 1) have strong connections with the seven properties of sensemaking. These connections are highlighted in Fig. 2 which shows various levels of support for the sensemaking properties in the influencing factors literature, particularly for "identity" and "cues". Second, sensemaking is a theoretical framework that sits well with the interpretive and subjective nature of this research project. Finally, sensemaking has been applied in agriculture previously, although not to a significant extent, and we are able to build on this previous work.

While Weick's work and much of the literature on sensemaking theory mainly concentrates on sensemaking in organisations, we argue that to understand the sensemaking process of *individuals* is also important. Weick postulates that according to Apker (2004), change is an occasion for individual sensemaking and furthermore he argues that individuals engage in sensemaking under conditions of equivocality and uncertainty. Checkland (2007) applies sensemaking in the area of general practice in the Health Service by investigating why practitioners behave as they do. Just as Checkland investigates why individual practitioners behave as they do, we explore how individual farmers behave in decision-making situations. Furthermore, Sonenshein (2007) argues that sensemaking is a crucial part of how individuals respond to ethical issues. More specifically, in agriculture, McCown (2005) outlines how decision support systems (DSS) are used to support farmer's sensemaking in conditions of uncertainty and ambiguity, while Magne and Cerf (2009) explore how farmers look for and make sense of information to develop their farming projects.

Alternatives to sensemaking in this context would include naturalistic decision-making (NDM), which has been applied tentatively in farmer decision-making for operational decisions (see for example, Daydé et al., 2014), but which is more prevalent in disciplines looking to model human psychology through computer technologies. Other decision-making models and theories, such as bounded rationality, could also be considered, but do not have the same fit with the choice of abductive logics of reasoning and an interpretive approach as does sensemaking. One criticism of sensemaking might be that it is largely an epistemological approach focussed on actors, giving insufficient attention to agency and structure. For this reason, some researchers have combined sensemaking with new institutional theory in the form of institutional logics or with Giddens' structuration theory (for example, Nigam and Ocasio, 2010; Fay and Larson, 2016) to explore the effect of structures within which decisions are made. Although it could be argued that the approach taken in this paper does not take account of external institutions such as the European Union, one of the findings is how little interviewees referred to them in their accounts of strategic farm expansion decisions. Future research could consider using Stones' (2005) strong structuration theory, in which agents' context and conduct analyses draw on perceptions of external agents and structures.

[1] Refers to the ongoing routines of permanent organising that takes place within an organisation.

[2] Refers to experimental innovative actions of temporary organising where new ideas are explored.

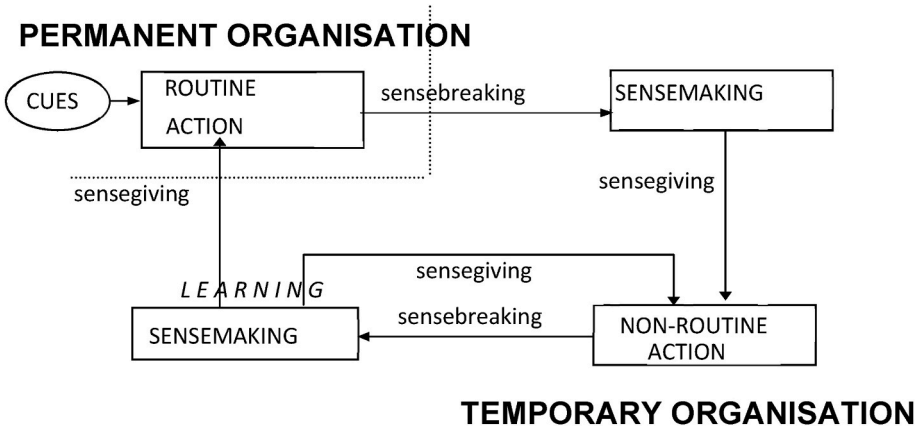

Fig. 1. Sensemaking, learning and organisational change – a model.
Source: Huzzard (2004, p.358).

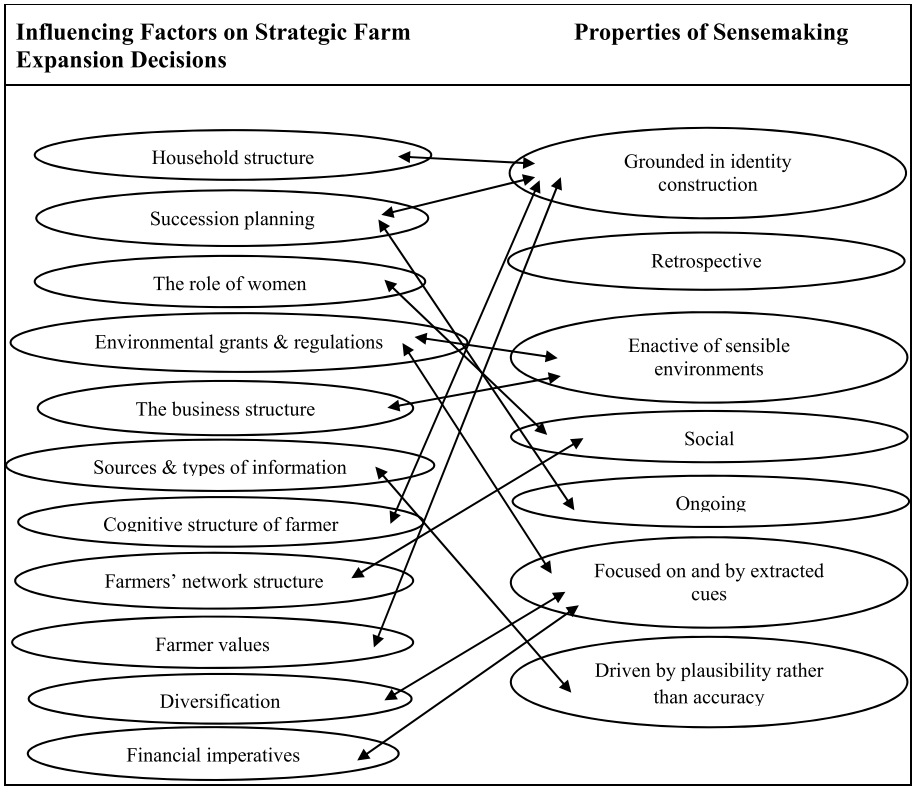

Fig. 2. Connections between the influencing factors on strategic farm expansion decisions per the literature and the properties of sensemaking.

In this context, sensemaking provides the groundwork needed to design such future studies.

4. Methods and data collection

The choice of research methodology is guided by the assumption that the farmer's reality (in regard to how farm expansion decisions are made) is subjective and socially constructed. It is felt that an interpretive methodology best suits the development of an explanation of how farmers make financial decisions. Saunders et al. (2009, p.378) note that semi-structured interviews are advantageous in situations where 'there are a large number of questions to be answered; where the questions are either complex or open-ended and where the order and logic of questioning may need to be varied'. According to Sekaran and Bougie (2010), semi-structured interviews allow critical factors identified in interviews to be pursued through "probes" to gain more in-depth information on them, allowing the interviewees to explain, or build on their responses. For these reasons, a semi-structured interview approach was adopted, using an interview guide. An abductive research strategy was adopted, consistent with Blaikie and Priest's (2019) description of such research as being the re-describing of motives and meanings of actors, within situations in which they occur, from observations and accounts of activities within the lifeworld of social actors. In practice, the formulation of the interview guide and data analysis is an iterative process as data collection progresses, guided by three key issues: the research aim, the literature review and the theoretical framework of sensemaking.

Semi-structured interviews were undertaken with 27 farmers who had undertaken strategic farm expansion decisions in recent years. To fulfil the research objectives, farmers were selected with the aim of

gaining a deep understanding of the experience of a carefully selected group of people (Maykut and Morehouse, 1994). Therefore, the assistance of three bodies who provide advisory services to farmers in Ireland, namely: Teagasc,[3] the Agricultural Consultants Association (ACA) and the Irish Farmers Association (IFA) were availed of to help identify farmers who had undertaken farm expansion decision. Representatives from these three organisations identified farmers who had undertaken farm expansion decisions that were willing to be interviewed by the researchers. Conscious of the findings in the prior literature in relation to the role of women in farmer decision-making (Wilkening, 1958; McGregor et al., 2001; Farmar-Bowers, 2010) when arranging the interviews, the researchers invited farmers' wives to take part in the interviews. This resulted in farmers' wives participating in the interviews on four occasions. Appendix C provides details of the 27 farmers[4] selected for interview. The 27 interviews comprise of nine from each of three primary farming types (dairy, tillage and beef) that operate in Irish agriculture. Most of the interviewees were based in the East of Ireland as this is an area which has good quality agricultural land. The size of the farms ranged from 110 to 660 acres, with tillage farms being generally larger (average 385 acres) compared to dairy farms (average 220 acres) and beef farms (average 265 acres); this is primarily due to scale being important for crop production in tillage farming. The interviews took place at the farmers' homes and lasted between one and 2 h. The interviews were recorded, transcribed and analysed using qualitative data analysis software (NVivo).

The formulation of the interview guide was an iterative process and was guided by three key issues: the research aim, the literature review and the theoretical framework of sensemaking. This iterative process involved the adoption of an abductive methodological approach where concepts, theories and models are used to guide researchers to develop useful explanations (Richardson and Kramer, 2006). A number of authors (Lundberg, 2000; Kolko, 2010; Jones and Li, 2017) outline strong links between sensemaking and abduction, thereby indicating how the methodological approach adopted aligns with the theoretical lens adopted.

The interview guide began by obtaining some background and demographic information on each interview participant, giving the researcher an opportunity to establish a good rapport with each interviewee. This was seen as important, because capturing data about finances, attitudes, goals and behaviours touches on sensitive issues for respondents. Next, the guide focused on key strategic farm expansion decisions that each participant had made in recent years. Similar open-ended questions were asked to all participants but, based on the respondents' answers, other relevant probing questions followed. The focus was on eliciting the influences on farmers to undertake such decisions.

The interview findings were analysed and subsequently presented to a focus group[5] which consisted of representatives from various stakeholder groups in Irish agriculture. Three industry experts participated in the focus group: a financial management specialist with Teagasc, an agricultural consultant[6] and a representative from IFAC Accountants.[7] This was essentially a group interview (Morgan, 1997) that allowed the researchers to probe the interview findings in more detail and to question industry experts as to why certain opinions are held (Blaikie and Priest, 2019). This provides a point of triangulation (Wahyuni, 2012), with parties noting the level of consistency with their experiences of dealing with farmers and the findings. Focus groups are a research method that is well suited to the agricultural industry (Bogue, 2013) and Agyemang et al. (2009) argues that the focus group method offers much opportunity for engaging effectively with all types of stakeholders in research projects. The focus group was professionally video-recorded and transcribed for analysis.

The interpretative data analysis process involved exploring the themes surrounding the influencing factors on the strategic farm expansion decisions that farmers undertook. Once themes were identified by the researchers, NVivo was used to analyse them further through detailed coding of the transcripts. The interpretive methodological approach adopted is compatible with the assumptions of the theoretical framework of sensemaking. Weick (1995) does not appear to specifically label sensemaking from a methodological, ontological or epistemological perspective, but refers to the terms "narratives", "story-telling", "socially constructed" and "constructing meaning", all of which have strong links to the interpretive and subjective nature of this study.

5. Findings and discussion

This study highlights a wide range of influencing factors on the strategic farm expansion decisions undertaken by farmers. By exploring different types of strategic farm expansion decision-making, and classifying the influencing factors as financial or non-financial, nuanced insights are revealed. Analysis of the influencing factors by farm type provides further insights, as certain influencing factors appear most associated with specific farm types.

Sixty-two strategic investment decisions[8] undertaken in recent years are explored in the 27 interviews. Six specific types of strategic farm expansion decisions are uncovered and explored: buildings investment, land purchase, machinery investment, land lease, livestock investment and off-farm investments. The myriad of financial and non-financial influencing factors that emerge, are labelled by the researchers and presented in Table 2.

As sensemaking is adopted as a theoretical lens to help build understanding and explanation of these influencing factors, a sensemaking perspective of both the financial and non-financial influencing factors, is delineated in Sections 5.1 and 5.2.

5.1. Sensemaking of the financial influencing factors

The financial influencing factors identified (Table 2) connect with many of the sensemaking properties that were profiled in Section 3. Some of the influencing factors appear to be *grounded in identity construction*, as many believe that investing in farm-related assets will give

Table 2
Influencing factors on strategic farm expansion decisions.

Financial Influencing factors	Non-Financial Influencing factors
To maximise profit	Operational issues
Cost reduction	Identity-related influencing factors
Tax planning	EU policies (agri-environmental and milk quota regulations)
Have money to invest	Opportunistic
No borrowing requirement	Lessons from past decisions
Debt repayment capacity	Social issues
Off-farm income	Encouragement from others
EU Grants	Succession planning
Long-term view	Trust in business venture partners
Diversification	

[3] National body providing integrated research, advisory and training services to farmers.

[4] Farmers interviewed are referred to as farmers 1 to 27, and the type of farmer is noted.

[5] Focus group participants are referred to as FG/1, FG/2 and FG/3.

[6] Private agricultural consultant with 25+ years' experience.

[7] Largest Farm Accountancy Practice in Ireland.

[8] Each farmer interviewed invested at least €250,000 on their farm in recent years. In most instances this involved multiple strategic farm expansion decisions being undertaken.

financial security in retirement. This is particularly evident for land purchase decisions as highlighted by Farmer 4 (dairy):

> *"I can sell it [land] again if we ever want the money for a pension or whatever."*

This 'long-term view' appears to be widely held among the farmers interviewed. A tendency to invest in farm-related assets, as opposed to non-farm assets, appears to be embedded in the cultural *identity* of farmers.

Many of the financial influences connect with the sensemaking property of *enactive of sensible environments*. The references of: 'having money to invest', 'no borrowing requirement', having the 'debt repayment capacity' and 'off-farm income', all reflect the farmer's financial environment and influence the level of investment. For example, Farmer 8 (beef) states how 'off-farm income' influenced many of his investment decisions:

> *"My wife is working which is the icing on the cake for us, so we have money to reinvest back into the farm. My wife keeps the house going and that type of thing."*

In terms of livestock investment, the presence of off-farm income also appears quite important for farmers. Willock et al. (1999) refer to the importance of off-farm income in farm decision-making and Kinsella et al. (2000) refer to it in their discussion on pluriactivity.

Other financial influencing factors provide evidence of farmers being *focused on (and by extracted) cues.* A number of farmers note that financial incentives, in the form of 'a grant scheme', often influence them to proceed with farm expansion, particularly for buildings investment. Farmer 11 (dairy) notes:

> *"Between the two of them [new farm buildings] I got about €110,000 in grants, they definitely would have influenced it."*

If grants are available to support farmers to undertake strategic investment decisions, then they may act as *cues* (triggers) for farmers to focus on and avail of such opportunities. Sutherland (2010) also acknowledges how grants are viewed as opportunities to be grasped. Diversification opportunities also represent *cues to be focused upon*. Diversification opportunities to increase farm income emerge as a financial influence, in particular, when the topic of off-farm investments is discussed. Diversification is highlighted in the literature as an influencing factor by Willock et al. (1999), while Lapple and Rensburg (2011) refer to how diversification is often influenced by economic (financial) factors.

Certain financial influencing factors also connect with the sensemaking property of *ongoing*. Farmer 3 (tillage) encapsulates this sentiment when he postulates:

> *"If a farmer makes a profit, a farmer will spend money … they will buy a tractor, build a shed, put down concrete or buy a bit of land* [examples of strategic decisions]*."*

This farmer refers to how farm expansion is often an ongoing activity as they continually invest in the farm. Weick (1995) describes this *ongoing* property of sensemaking as a circular process that never starts or stops. Similarly, the *ongoing* necessity to maximise profit (through increasing farm income or cost reduction) and to engage in tax planning is highlighted as a financial influence. Farmer 5 (dairy) outlines how his decision to lease more land was influenced by the necessity to maximise profit:

> *"We were at a point in 2008/2009 that there wasn't a full-time income for me from the farm, and it was either I go off-farm to get a job or expand".*

While, Farmer 8 (beef) emphasises 'tax planning' in relation to buildings investment:

> *"The last shed I built they allowed you to write off 40% of it or something in the first year, they gave a special [tax] exemption because you were building for [anti] pollution reasons. The last shed I built, a high aspect of that, was for tax reasons."*

This *ongoing* influence of profit maximisation is perhaps one of the primary financial influencing factors on farmer decision-making as it a fundamental assumption in many farmer decision-making models, as acknowledged by Wallace and Moss (2002). Furthermore, Willock et al. (1999) highlight it as an important farmer behaviour.

Interestingly, the discussions with farmers around the strategic farm expansion decisions undertaken do not provide any meaningful insight into how the financial aspects of supply chains, contracts and market conditions influence such decisions. This issue was probed with the focus group and the comments of FG/1 helps to shed some light:

> *"There's a lot of uncontrollables out there … but farmers should control the controllables and mind what's inside the farm gate … What you can control is what you should be trying to improve … if you can focus on the efficiencies on the farm, you're in a better position to mitigate against those uncontrollables".*

Perhaps the findings in this study reflect this sentiment; when farmers discuss the issues that influence their strategic farm expansion decisions, they do not necessarily think about uncontrollable factors such as supply chains, contracts and market conditions, as farmers are price takers with supply chains and contracts mainly non-negotiable (Sexton and Xia, 2018). Operational decision-making maybe influenced by such factors, but in strategic farm expansion decisions, more long-term financial influencing factors, such as affordability, tax planning and financial security, appear to be of primary consideration.

Reflecting on the financial influencing factors emphasised by the farmers, it is clear that they are important considerations. However, based on the conversations with farmers, many do not appear to conduct detailed financial analysis before proceeding with strategic farm expansion decisions. The emerging role played by financial influencing factors has strong connections with the sensemaking property of *plausibility rather than accuracy*. This sensemaking property is apt, as farmers tend to dislike spending time recording, analysing and maintaining financial records (Turner and Taylor, 1989). Instead, they may look at some key financial aspects of the decision to guide them, rather than looking at all possible financial data. Collectively, these financial reasons are referred to in the literature as economic factors (Gasson, 1973; Wilson and Hart, 2000; McGregor et al. 2001; Lapple and Rensburg, 2011) or instrumental factors (Hansen and Greve, 2014). While past studies highlight some of the individual financial influencing factors profiled, they do not explicitly bring together a comprehensive list of financial influencing factors on the strategic farm expansion decisions that farmers undertake, a gap addressed in this study.

5.2. Sensemaking of the non-financial influencing factors

A range of non-financial influencing factors (themes) emerge from the strategic farm expansion decisions explored, with many of them evolving by clustering similar influencing factors together. Appendix D details those factors that have been grouped together and labelled to form the over-arching themes of non-financial influencing factors.

Many of the non-financial influencing factors identified connect with the *grounded in identity construction* property of sensemaking. Weick (1995) outlines how sensemaking begins with the sensemaker (the farmer) and how s/he acts is dependent on the beliefs s/he holds about their role. Farmer '*identity-related*'[9] issues are emphasised quite strongly

[9] Label that includes six influencing factors (see appendix D) grouped to describe what it means to be a farmer – love of the land, taking care of animals and farming is what they know best.

in the interviews. Many cite 'emotive reasons'; a label referring to how farmers make decisions based on their love of farming. For example, in the case of land purchase, Farmer 19 (tillage) acknowledges this emotional attachment:

> *"It was a piece of land that was sold off of the family farm back about 35 years ago. We wanted to buy that back, and that was simply the reason."*

'Succession planning' is another prominent non-financial influence highlighted and is deeply embedded in the cultural *identity* of farming. Many farmers state that the fact that they have children who are (or might become) interested in farming is a considerable influence. Farmer 4 (dairy) notes:

> *"I have three lads, if two of them were interested in farming, we could give two of them 100 acres each if they wanted cows."*

Interestingly, some mention succession planning even though, when probed further, they do not have a successor identified. Öhlmér et al. (1998), O'Donnell et al. (2011) and Hansen and Greve (2014) all identify succession planning as an influence in farmer decision-making.

Other '*identity-related*' aspects cited include: farmers rather 'stick to what you know' (i.e., remain in farming rather than pursue other investments), 'pride in farmyard appearance' (having good facilities is important), 'status – expectations of others' (concern for how they are viewed by other farmers), 'animal health' issues (animal welfare is a priority), and finally, in respect to land, 'access – right of way' is acknowledged (ownership of land, access and right of way appears to be important). The evidence gathered supporting these '*identity-related*' influencing factors corroborates the emphasis on identity in the literature (Gasson, 1973; Austin et al., 1996; Willock et al., 1999; Beedell and Rehman, 2000; McGregor et al., 2001; Hilkens et al., 2018).

Certain non-financial influencing factors connect with the sensemaking property of *enactive of sensible environments*. 'Operational' and day-to-day farm management issues include reasons that are reflective of the micro-environment in which the farmer operates. For example, the fact that farmers face 'capacity constraints' is frequently mentioned, with land highlighted as a limiting factor by numerous farmers. Farmer 12 (dairy) notes:

> *"Land is our limiting factor and if we could buy another piece nearby of decent quality, we'd be buying it tomorrow."*

Furthermore, the operational rationale to 'improve day-to-day management' appears to be particularly strong for buildings investment decisions. Many farmers describe how investments aid them operationally, as they provide 'flexibility to adapt'. This influence appears most associated with land purchase decisions and includes issues such as: 'to replace rented facilities' or to gain 'extra facilities', and the fact land is of 'good quality'. In respect to machinery investment, operational influences highlighted are: the need to 'upgrade' machinery, the need to continually invest to conduct 'sub-contracting work', and many find it difficult to employ farm labourers, citing 'lack of available workforce'. These operational influencing factors are similar to operational influences referred to by O'Donnell et al. (2011) and are examples of 'physical farm factors', classified as 'antecedent variables', by Willock et al. (1999).

Some non-financial influencing factors connect with the *focused on and by extracted cues* property of sensemaking. EU policies, such as agri-environmental schemes and milk quota regulations outline conditions for farmers to abide by, and if compliance with such policies require strategic investment, they may act as a *cue* for farmers to focus on and take action. For example, stringent 'nitrates compliance' issues surrounding effluent management appear as considerations when investing in farm buildings. Farmer 6 (beef) outlines:

> *"I have a bit of a pollution situation at the back of the farmyard, so I am having to spend about €40,000 to sort it out."*

Another example is 'milk quota abolition' (which was taking effect for dairy farmers around the time of data collection). Essentially, EU policies outline conditions for farmers to abide by, and if compliance with such policies require strategic investment, they may act as a *cue* for farmers to focus on and take action. This finding on EU policies as an influence corroborates the significant literature in this area (Beedell and Rehman, 2000; Wilson and Hart, 2000; McGregor et al., 2001; Sutherland, 2010; Ingram et al., 2013).

Opportunities that present themselves also act as non-financial reasons and present as cues to be focused upon (*focused on and by extracted cues*). A number of farmers cite 'opportunistic' reasons for undertaking their farm expansion decisions and, in many instances, refer to them in the context of land purchase. It simply means, adjoining land is for sale, and as these opportunities do not present themselves often, the farmer is influenced to buy it. Farmer 4 (dairy) expresses this sentiment:

> *"I would have bought bits [of land] over the years, I wouldn't buy a mile down the road, but if anything came up joining us, we would try to buy it."*

This influencing factor of 'opportunistic' is also alluded to by some farmers in the case of off-farm investments.

The *retrospective* property of sensemaking is also coming through in the data. Weick (1995, p.30) notes 'through reconstruction of past events, newly causal explanations are found and specific meanings arise'. It appears that 'lessons learned from past investment decisions' often give farmers the confidence to proceed with further on-farm investment. In particular, lessons 'learned from past "poor" investment decisions' off-farm, often influence strategic investment on farm. Farmer 1 (dairy) states:

> *"I invested in other things* [off-farm] *that I have no interest in, and I never made anything on them … only torment out of the bloody thing, and I have one thing* [off-farm investment] *left and I can't wait to get rid of it."*

This evidence also reinforces the 'stick to what you know', 'identity-related' influencing factor referred to earlier.

The '*social*' property of sensemaking, refers to how sensemaking is not a solitary process and is contingent on others. It is evident from the interviews that farmers discuss their strategic farm expansion decisions with others, as many note that they are 'encouraged by others' to undertake such decisions. This encouragement appears to come from two primary sources: from family members and/or from other farmers. Encouragement from family members is predominately evident in the context of land purchase decisions, while encouragement from other farmers through network groups (Hansson and Ferguson, 2011) appears to be more prominent for buildings investment decisions. Farmer 8 (beef) highlights:

> *"You might have an idea you are going to do it [new farm building] one way, but, being in a discussion group and going on to another farm, you pick up different ideas."*

Finally, other non-financial influencing factors highlighted are 'social influences' and 'trust in business venture partners', influences' that do not appear to directly connect with the sensemaking properties but are nonetheless important. A number of farmers cite 'social influences[10]', as being part of their farm expansion decision-making process, outlining how they invest in buildings to upgrade their facilities so as to 'reduce manual labour' and so that they can 'spend time with family'. Another 'social influence' is highlighted when Farmer 27 (dairy) notes that he wants 'to be his own boss'. These 'social influences' highlight how individual personal social goals may influence farmer decision-making (Willock et al., 1999). One particular farmer interviewed does not

[10] Label that includes three influencing factors (see appendix D) grouped together to describe personal and family lifestyle influences.

own land, as the land he is farming is leased on a long-term lease. To enter into such a lease, trust is deemed important. In terms of off-farm investments, 'trust in business venture partner' is also deemed an important factor. Although this influence is not discussed extensively in the interviews, it nonetheless appears to be an important influencing factor on the strategic farm expansion decisions that some farmers undertake.

The focus group is used as a probe to test the reasonableness of the findings from the farmer interviews. There is broad consensus with the influencing factors identified and this is acknowledged by FG/1:

"There's a lot of factors and any one individual could have any amount of those factors. So, I'm not surprised."

However, FG/2 highlights his surprise (given the farmers selected for interview) with how strong the 'identity influence' is emphasised in the interviews:

"The identity one strikes me as being very strong, considering that you selected a fairly strong group or fairly dynamic group from within the farming community that I thought wouldn't be as tied [to identity], would be more commercial rather than tied to the love of the land." (FG/2).

Furthermore, FG/3 reiterates this aspect of identity, when he claims:

"The most dangerous field, is the field next door."

This means that the identity of farmers often compels them to buy adjoining land, even though it may not make financial sense to do so.

The properties of sensemaking appear to be supported in the data surrounding these non-financial influencing factors on strategic farmer decision-making. The strong presence of these properties demonstrates that sensemaking is an appropriate theoretical lens to adopt and suggests that the process of strategic farmer decision-making is best described as a sensemaking activity.

5.3. Review of the influencing factors by type of farm expansion decision and farm type

Subsequent to the analysis in Sections 5.1 and 5.2, a deeper analysis of the financial and non-financial influencing factors on each of the sixty-two strategic farm expansion decisions explored in this study are reviewed, using NVivo, to analyse if the specific type of strategic farm expansion decision (buildings investment, land purchase etc.), and farm type in operation (dairy, tillage, beef), highlight any notable trends. When the influencing factors are analysed by the type of strategic farm expansion decision undertaken, specific financial and non-financial influencing factors appear to be more strongly emphasised in certain types of decision-making situations. A comparison of buildings investment decisions to land purchase decisions highlights this contrast. Firstly, in terms of financial influencing factors, many farmers cite 'to maximise profit' and 'tax planning' as influencing factors for buildings investment while, for land purchase, the strongest financial influencing factors appear to be that the farmer 'has money to invest' and 'debt repayment capacity'. Secondly, in terms of non-financial influencing factors, many farmers cite 'operational issues' and 'EU policy' as influencing factors for buildings investment while, for land purchase, the strongest non-financial influencing factors appear to be 'identity', 'succession planning' and 'opportunistic'. This evidence suggests that, although common influencing factors may exist across different types of strategic farm expansion decision, the triggers/cues for each are often more closely associated with specific financial and/or non-financial influencing factors. When this issue is probed with the focus group, the participants concur; FG/3 states:

"Land seems to drive farmers' bananas … guys will be a lot more rational about buildings and sheds."

Similarly, when the influence 'opportunistic' is discussed, FG/2 concurs with how it is strongly associated with land purchase decisions, stating farmers are often of the frame of mind:

"It [land] came up [for sale]. I had to buy it."

These views of the focus group participants demonstrate how they believe, based on their experience of interacting with farmers, that the triggers/cues for each type of strategic farm expansion decision may not always be the same.

A notable trend also emerges when the influencing factors in all 62 strategic decisions explored are analysed by farm type (dairy, tillage, beef), as specific financial and non-financial influencing factors appear to be more strongly emphasised by specific farm types. The beef farmers appear to invest for 'operational (day-to-day management)' and 'identity-related' reasons and appear to be reliant on 'grant schemes' to assist them in their farm expansion decisions. On the other hand, the dairy farmers appear to be more financially focused in terms of 'profit maximisation', appear to be less influenced by 'identity-related' factors and less dependent on 'grant schemes' for financial support in their decision-making process. This analysis demonstrates that the dairy farmers are the farm type that appears to be most influenced by financial factors and least influenced by non-financial factors in their decision-making. The opposite appears to apply for the beef farmers, while the tillage farmers appear to be moderately influenced by both financial and non-financial influencing factors. These findings reflect the financial reality of these three farm types operating in Ireland. Dairy farmers are the most profitable farm type, followed by tillage, with beef being the least profitable. Beef farmers are significantly reliant on support payments with many beef enterprises considered economically vulnerable (Dillon et al., 2019), therefore, the identity and operational reasons for proceeding with strategic farm expansion decisions on beef farms is not surprising.

These findings also concur with the sentiment that exists in the industry and is vouched in the focus group by FG/2:

"I'd be interested in your dairy farmers being less influenced by the identity factors because I would have thought that too. I would have thought they were sharper and more commercially focused than your guy with a dog, a stick and ten bullocks [beef farmer]."

This analysis supports how farm type is a key contributor as to which influencing factors are present in the strategic farm expansion decision-making process of farmers.

5.4. Synthesis of key findings

The empirical findings highlight that the decision-making process of farmers is influenced by a multitude of factors, some financial, others non-financial. Sensemaking theory helps us to obtain a deeper understanding of the role of those influencing factors in that process. When the influencing factors are reviewed against the seven properties of sensemaking, all of the seven properties appear to be supported in the data. Weick (1995, p18) argues that the seven properties serve as a rough guide for enquiry into sensemaking, meaning that they are not an exact prescription of what sensemaking is and also suggests that not all properties are evident in all sensemaking activities. This is also the case in this study, as the empirical findings highlight varying levels of support for each of the sensemaking properties. Weick's work and much of the literature in the area of sensemaking evolves around research in crisis situations. Many of the influencing factors identified (for example, capacity constraints or a change in EU policy in relation to the regulations around agri-environmental schemes) could be considered to be a crisis situation for a farmer, and hence a sensemaking occasion presents itself.

Applying the sensemaking model developed by Huzzard (2004) to the strategic farm expansion decision-making process of farmers, the influencing factors can be considered as the *cues* that trigger that process. *Cues* emerge in the *routine action* of day-to-day farm management, Huzzard refers to this as the *permanent organisation*, which trigger

farmers into a process of sensemaking. Huzzard refers to this stage as entering a *temporary organisation* where *non-routine action* is undertaken. We contend that this non-routine action is the strategic farm expansion decision that each farmer undertakes. Once such strategic decisions are undertaken (non-routine actions) farmers return to the *permanent organisation* once more. This cyclical process continues as *cues* (influencing factors) emerge in the dynamic and complex environment that farmers operate.

Finally, the analysis in Section 5.3 suggests that the process of how farmers make sense of the environment in which they operate and make sense of decision events that they are faced with, is largely dependent on the specific *type of decision* under consideration and the *farm type* in operation.

6. Conclusion

The first contribution is to extend the farm management literature. By exploring different types of farm expansion decision on various farm types, the evidence uncovered provides the opportunity for a wide range of *both* financial and non-financial influencing factors on strategic farm expansion decisions to be profiled. In contrast, the prior literature places a particular emphasis on non-financial influences on farmer decision-making, with less of an emphasis on financial factors. Furthermore, by adopting a management accounting approach of profiling the influencing factors on farmer decision-making as being either financial or non-financial, a new prospective is brought to this body of literature. Furthermore, research on the influencing factors from an accounting perspective is sparse; the data analysed and presented offers a unique insight into what influences the strategic farm expansion decisions that farmers undertake and offers a valuable contribution.

The second contribution is a practical one. The analysis by farm type and by type of strategic farm expansion decision highlights how certain influencing factors appear to (1) be most associated with specific farm types and, (2) act as an influence for farmers to proceed with specific types of farm expansion decision. These findings present interesting insights for policymakers and farm advisors. Firstly, if policymakers take these influencing factors into account when formulating policy on how financial support is allocated to farmers to encourage sustainable food production, more effective policies may be developed. For example, where policies are tailored at specific farm types, factors that trigger farmer behaviour within respective farm types could be incorporated into their design to encourage participation/compliance. Secondly, if farm advisors (agricultural consultants and rural accountants) develop a deeper understanding of what factors are important to farmers, within various farm types and in specific farm expansion decision-making situations, then the design and delivery of their advisory services to clients may be improved.

The third contribution is a contribution to theory. By taking the concept of "trigger events" in strategic change introduced by Murray-Prior and Wright (2001) and Sutherland (2012) in the farmer decision-making literature and connecting them to the "cues" that trigger a process of sensemaking, a deeper understanding of the role of influencing factors in farmer decision-making is achieved. Furthermore, by applying sensemaking theory to the influencing factors identified, this study highlights how many of them connect with the properties of sensemaking (Weick, 1995). This suggests that the process of strategic farm expansion decision-making by farmers may be best described as a sensemaking process. We contend that the influencing factors act as a *cue* which may trigger a sensebreaking activity (Huzzard, 2004) that causes the farmer to enter a process of sensemaking. This process of sensemaking assists farmers to navigate their way through their strategic farm expansion decision-making process and culminates in a decision being undertaken. This is a new perspective not previously evident in the farmer decision-making literature and extends the theoretical debate around sensemaking in an agriculture context.

There are some limitations to the research approach adopted. It was not possible to randomly select farmers for interview, as farmers who had made significant farm expansion decisions on their farms had to be targeted to achieve the research objectives (Guest et al., 2006). As a result, the size of farms featuring in the study could be considered quite large, when compared to the average size of farm operating in Ireland. Furthermore, the influencing factors on the strategic farm expansion decision-making process of the farmers sampled may not be reflective of all farmers. While this paper concentrates on exploring the influencing factors on the strategic farm expansion decision-making process of farmers, there are other aspects of that process that warrant investigation. Nuthall (2012) and Maikinen (2013) contend that intuition is an important influence of a farmer's managerial thought process; so, a deeper understanding of intuition's role in farmer decision-making is an area for further research. It would also be interesting to explore how these influencing factors compare to the influencing factors on the strategic decisions that small business owner-managers undertake in other industries.

CRediT authorship contribution statement

Michael T. Hayden: Conceptualization, Methodology, Investigation, Formal analysis, Writing – original draft. **Ruth Mattimoe:** Supervision, Writing – review & editing. **Lisa Jack:** Supervision, Writing – review & editing.

Acknowledgment

The support of a grant from Teagasc to carry out the empirical work is gratefully acknowledged.

Appendix A. Attitudes, Goals and Behaviours in Farmer Decision-making

Attitudes	Goals	Behaviours
Risk aversion	Job satisfaction	Profit maximising
Innovation	Status	Information gathering
Diversification	Quality of life	Diversification
Off-farm work	Management goals	Off-farm employment
Environment	Other specific objectives	
Production		
Management		
Legislation		
Stress		
Pessimism		
Satisfaction		

Source: Willock et al. (1999).

Appendix B. Weick's Seven Properties of Sensemaking

Sensemaking Properties	Illustrative Quote (Weick, 1995)
1. Grounded in identity construction	Sensemaking begins with a sensemaker. 'How can I know what I think until I see what I say?' (p.18). 'Individuals' self-concepts and personal identities are formed and modified in part by how they believe others view the organisation for which they work' (p.21).
2. Retrospective	People can know what they are doing only after they have done it. Consequently, they can figure out meaning of their actions, but only of actions in their past (p.24). How can I know what we did until I see what we produced? In this reconstruction of past events, newly causal explanations are found and specific meanings arise (p.30).
3. Enactive of sensible environments	People create their own environments and these environments then constrain their actions. They act, and in doing so, create the materials that become the constraints and opportunities they face (p.31). Action is crucial for sensemaking; it is a pre-condition of it (p.32).
4. Social	Sensemaking is never solitary because what a person does internally is contingent on others. Even monologues presume an audience (p.40). What I say is determined by who socialised me and how I was socialised (p.62).
5. Ongoing	Sensemaking never starts. To understand sensemaking is to be sensitive to the ways in which people chop moments out of continuous flows and extract cues from those moments (p.43). The reality of flows becomes most apparent when that flow is interrupted (p.45).
6. Focused on and by extracted cues	Extracted cues are simple, familiar structures that are seeds from which people develop a larger sense of what may be occurring. Cues will serve as a point of reference (p.50).
7. Driven by plausibility rather than accuracy	Though accuracy may be nice, it is not always necessary in sensemaking (p.60). What is necessary for sensemaking is plausibility, coherence and reasonableness. Sensemaking is about accounts that are socially accountable and credible (p.61).

Source: Weick (1995).

Appendix C. Profile of famers interviewed in order of interview completion

Interviewee	Farm Type	Location by County	Size of Farm (acres)
1	Dairy	Carlow	235
2	Tillage	Carlow	420
3	Tillage	Kilkenny	215
4	Dairy	Meath	200
5	Dairy	Waterford	285
6	Beef	Kildare	310
7	Beef	Carlow	140
8	Beef	Waterford	335
9	Tillage	Carlow	220
10	Dairy	Westmeath	260
11	Dairy	Limerick	215
12	Dairy	Limerick	115
13	Beef	Carlow	110
14	Tillage	Kildare	220
15	Beef	Laois	600
16	Beef	Kildare	330
17	Tillage	Carlow	265
18	Tillage	Offaly	400
19	Tillage	Wicklow	660
20	Beef	Kerry	150
21	Dairy	Limerick	270
22	Dairy	Galway	150
23	Tillage	Wexford	650
24	Beef	Laois	300
25	Beef	Galway	110
26	Tillage	Louth	420
27	Dairy	Laois	255

Appendix D. Overview of influencing factors grouped together to form each category of non-financial influencing factor in Table 2

Category of influencing factors	Non-financial influencing factors included in each category
Operational influencing factors	Capacity constraints
	Improve day-to-day management
	Upgrading machinery
	Replacing rented facilities
	Good quality land
	To subcontract
	Flexibility to adapt
	Extra facilities on acquired land
	Lack of available workforce
Identity-related influencing factors	Emotive decision-making
	Stick to what you know
	Animal health
	Pride in farmyard appearance
	Status – expectations of others
	Access – right of way
EU Policy	

(continued on next page)

(*continued*)

Category of influencing factors	Non-financial influencing factors included in each category
	Agri-environmental issues
	Milk quota abolition
Opportunistic	Sub-category on its own
Lessons from past decisions	Sub-category on its own
Social issues	Reduce manual labour
	Time to spend with family
	To be own boss
Diversification	Diversification
	Farmer likes a challenge
Encouragement from others	Discussion group participation
	Encouragement from family
Succession planning	Sub-category on its own
Trust in business venture partners	Sub-category on its own

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