

Financial Literacy in Farming Enterprises

By

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A thesis submitted for the degree of
Doctor of Philosophy

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September 2021

Declaration

I hereby certify that this material, which I now submit for assessment on the programme of study leading to the award of Doctor of Philosophy is entirely my own work, and that I have exercised reasonable care to ensure that the work is original, and does not to the best of my knowledge breach any law of copyright, and has not been taken from the work of others save and to the extent that such work has been cited and acknowledged within the text of my work.

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Acknowledgements

This thesis would not have been completed without the help and support of a large number of people for which I will be eternally grateful.

Firstly, I would like to thank my supervisor Professor Teresa Hogan for her encouragement, patience and support. She kept me motivated and on track over the past six years and I always enjoyed our many conversations. I also want to say a special thanks to Professor Barbara Flood for her insight and advice along this journey. She was the first person I talked to fourteen years ago as a leaving cert student about coming to DCU to study and she has always been a great help throughout my time in DCU.

I want to thank my colleagues in DCU Business School. There were many of us on the same PhD journey over the past number of years which provided a great outlet of support and also an avenue to vent frustration!

Most importantly, I would like to thank all those who participated in this study, especially the farmers who were kind enough to give their time for my visits. I was always greeted with a warm welcome and I enjoyed the many conversations we had over tea at kitchen tables and farm walks over the year of field work. Seeing the dedication and passion these farmers, and their extended families, have for their land and their animals provided me with a great sense of satisfaction and encouragement that this research can be of practical benefit to farmers on the ground.

I would also like to thank the key stakeholder focus group participants who were so willing to assist me in conducting my research. Thanks to the representatives from: Teagasc, AIB, Department of Agriculture, Food, and the Marine, and IFAC Accountants. Finally, I would like to say a special thanks to a number of people in Teagasc without whom this research would have never been undertaken and who were so helpful in the selection of the case study farms. Thank you very much to Kevin Connolly, Fintan Phelan, James McDonnell, Mairead Kirk, Fiona Doolan, and Kevin Heanue.

Over the past six years, I have been fortunate enough to present my research at various conferences and workshops and I would like to thank those who attended these events and gave

valuable comments and constructive feedback. In particular, I would like to thank IAFA who provided me with sponsorship as part of their annual IAFA Doctoral Colloquium which helped greatly with my interview transcriptions and was invaluable in completing this research. The IAFA community has been a great resource for me throughout the years, even before I began my PhD journey, and it is something I am very grateful for.

Finally, I would like to thank my family for all they have done for me to get this far. To my parents, for their support and encouragement since I first decided to go to DCU as a green 17-year-old. To my sister, Áine, for her ability to keep me grounded and to remind me on a regular basis what “real work” is on the farm. A special thanks also to my wife Nóra, who has shown great patience and been a source of great support for me over this journey. Finally, thank you to little JJ for being a welcome distraction to this thesis and everything else going on in the world for the past 18 months.

Ardrahan, Galway

May, 2021

John

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List of Abbreviations

CAP	Common Agricultural Policy
CSO	Central Statistics Office
DAFM	Department of Agriculture, Food, and the Marine
DCU	Dublin City University
ePM	Teagasc eProfit Monitor ¹
EU	European Union
FFI	Family Farm Income
FL	Financial Literacy
GAA	Gaelic Athletic Association
IFAC	Irish Farms Accounts Co-operative (Accounting Firm)
IT	Information Technology
MSE	Micro and Small Sized Enterprises
MSME	Micro, Small, and Medium Sized Enterprises
NFS	National Farm Survey
NLS	New Literacy Studies
PFL	Personal Financial Literacy
RQ	Research Question
REC	Research Ethics Committee
SME	Small and Medium Sized Enterprises
VAT	Value Added Tax

¹Teagasc – the Agriculture and Food Development Authority – is the national body providing integrated research, advisory and training services to the agriculture and food industry and rural communities. The Teagasc eProfit Monitor (ePM) provides a standardised summary report of the financial performance of a farm over a year and allows benchmarking to be undertaken across farms operating in a similar sector.

Abstract

Financial Literacy in Farming Enterprises

John Nolan

Financial literacy has attracted significant interest in the past decade with researchers predominantly adopting a knowledge and skills-based perspective on this complex phenomenon. Theoretical diversification has the potential to facilitate greater understanding and by extending the literacy as a social practice framework to the domain of finance, this study seeks to examine *how financial literacy manifests itself in farming enterprises*. It is exploratory research that conceptualises the financial literacy of farmers as a social practice that is situated within a particular socio-cultural setting. Using in-depth multiple case analysis, it explores financial literacy in five Irish farms over the course of a year.

The study makes four important contributions to the field of financial literacy. Firstly, the study is original in applying a social practice lens to financial literacy in a business context. It extends Barton and Hamilton's (1998) social theory of literacy to financial literacy and develops an empirical structure of its various dimensions. Secondly, it provides new theoretical insights on how temporality, role assignment, and power influence farmers' financial literacy practices. Thirdly, the study provides new empirical evidence of the importance of institutional influence, historical issues, and temporal pressure in understanding the financial literacy practices that farmers engage in. Finally, for practitioners, it provides the first farm financial calendar derived from farmers' financial literacy practices and highlights the importance of a social practice, rather than skills driven, approach to farmer financial training.

Chapter 1 – Introduction

1.1 Research Background and Problem

Financial literacy cannot merely be viewed as the ability to read and write in the language of finance and accounting. Instead, financial literacy is a concept that needs to be situated and studied in practice because the characteristics that constitute financial literacy, or those that apply to it, vary with time and place.

Bay, Catasús and Johed (2014, p.36)

The aftermath of the financial crisis resulted in a growing concern over levels of personal financial literacy which heralded an increase in academic attention in the past decade. This is evidenced in the rising number of articles on the topic in Figure 1.1 below, from 20 in 2010 to 152 in 2020. According to a comprehensive review by Lusardi and Mitchell (2014), this research has focused on three main areas; the measurement of financial literacy across demographic groups, the impact of financial literacy on decision making, and the effectiveness of financial education initiatives. The dominant perspective to date has been based on the “autonomous” view of financial literacy – that posits financial literacy as a singular capability that, when gained, will automatically affect people’s financial practices. However, as suggested by Bay et al. (2014), future financial literacy studies could benefit from drawing on recent developments in literacy research, known as “New Literacy Studies”, which see literacy not as a set of skills but rather as a social practice which is rooted in social, cultural and political context (Street 2003). This view of financial literacy suggests it is not possible to delineate financial literacy without taking into account how, when and toward whom the literacy event is directed and that different forms of literacy co-exist and compete in society. It is an ill-defined, complex and dynamic phenomenon that varies across contexts, which lends itself to a qualitative research approach.

This thesis focuses on financial literacy in micro and small enterprises (MSEs), which are a subgroup of micro, small and medium sized enterprise (MSMEs). We exclude medium sized firms as given their size (50-249 employees) they are more likely to employ a qualified accountant and less likely to experience issues with financial literacy. Nevertheless, research in the field tends to aggregate the three firm sizes together. While studies have found widespread financial illiteracy at the individual level (e.g. Lusardi and Mitchell 2011), there

has been little focus on financial literacy at the level of the entrepreneur/owner manager (OM) or MSME (Calcagno et al. 2019). A recent survey of Irish MSMEs found that while 81% of respondents said that financial literacy was important, only 46% said they had a good knowledge of financial literacy (SFA 2019). The study notes that despite recognising the importance of financial literacy, owner-managers were reluctant to improve this for a variety of reasons including a lack of time, the cost of training, inappropriate methods of training or believing it was not their responsibility but rather their accountant's (SFA 2019). Table 1.1 illustrates this gap in the financial literacy literature and highlights the small, albeit growing slowly, portion of overall financial literacy articles that are focused on an MSME context. Since 2013, only 4% of all papers on financial literacy were focused on MSMEs. As noted by Wilson et al. (2015, p. 69) "*...there is a noticeable lack of literature concerned with the financial literacy of managers within organisations, despite the proliferation of textbooks and short courses with titles such as "Finance for the "Non-Financial Manager. There is, however, a great deal of literature on the financial literacy of private individuals"*". Financial literacy is of consequence both inside and outside of the organisation (Bay et al. 2014) and its absence in an entrepreneurial context has the potential to be even more damaging to an economy if entrepreneurs without sufficient financial literacy are left responsible for struggling businesses under financial pressure.

There are clear parallels between the current focus on inadequate personal financial literacy and its relationship with over indebtedness and insufficient retirement planning and inadequate MSME financial literacy and its relationship with financially troubled businesses (Dahmen and Rodriguez 2014). Financial literacy is a context dependent concept that is not drawn upon in one particular setting for one particular purpose (Bay et al. 2014) and there is a need to understand what MSME financial literacy encompasses and the impact it has on MSME financial management and performance. In the aftermath of the global pandemic, as was the case after the great financial crisis, policymakers have tended to focus interventions on the supply of finance to MSMEs (OECD 2020). However, a third of EU MSMEs rely on internally sources of finance (Moritz, Block and Heinz 2015) and UK research indicates a high level of discouraged borrowing even amongst high growth MSMEs in the aftermath of the great financial crisis (Brown & Lee 2017). This indicates the need to focus on the demand side and financing literacy practices of these enterprises.

Figure 1.1: Financial Literacy Publication Overview²

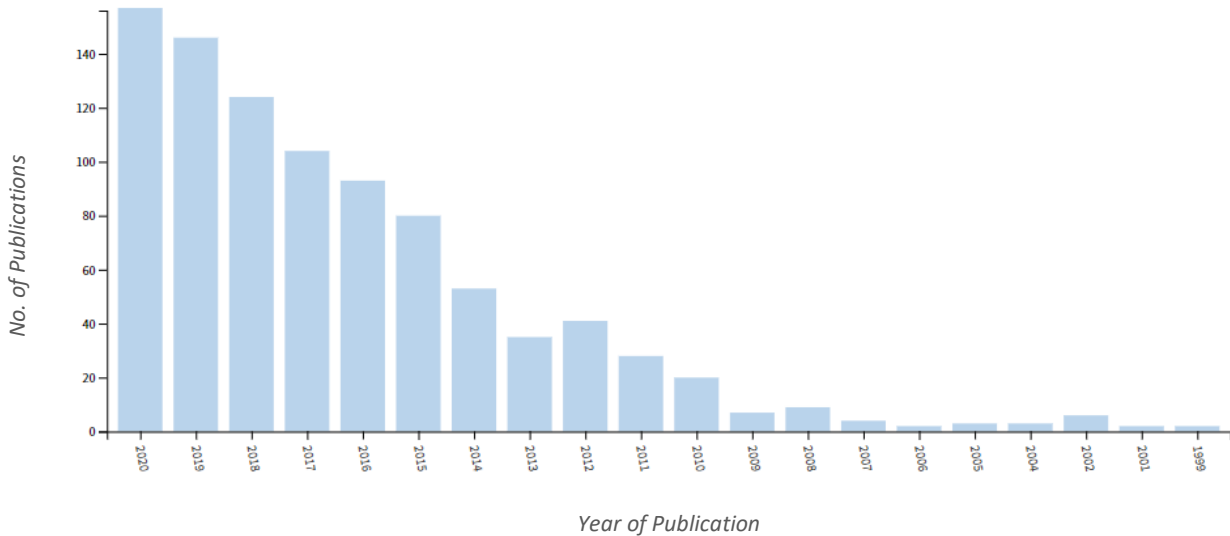


Table 1.1: MSME Financial Literacy Publication Overview³

Year of Publication	Number of Publications		MSME FL as % of Total FL
	Financial Literacy	MSME Financial Literacy	
2020	152	7	4.6%
2019	144	8	5.5%
2018	123	8	6.5%
2017	103	1	1%
2016	92	5	5.4%
2015	79	2	2.5%
2014	52	0	-
2013*	34	1	2.9%
Total	779	32	4.1%

*There were no MSME financial literacy publications found before 2013

² Figure 1.1 was prepared using the Web of Science database. The search criterion was to have the term “financial literacy” in an article’s title for the period of 1945-2020 inclusive.

³ Table 1.1 was prepared using the Web of Science database. For the “Financial Literacy” publications, the search criterion was to have the term “financial literacy” in an article’s title for the period of 1945-2020 inclusive. For the “MSME Financial Literacy” publications, the search criteria were to have the term “financial literacy” in an article’s title for the period of 1945-2020 inclusive as well as at least one of the following terms; “MSME”, “SME”, “business”, “entrepreneur”, “entrepreneurship”, “entrepreneurial”.

1.2 Research Motivation

The initial motivation for this research originated from my own personal experience of farming over the past fifteen years in the west of Ireland and first hand observations of how farmers engage with financial practices and financial stakeholders. My own background - as an academic, a qualified chartered accountant, and a part-time farmer on my own family farm in partnership with my father - provided a unique perspective in which to explore the complexity of financial literacy at a farm level and how it manifests itself. The common discourse of farmers lacking sufficient financial knowledge and skills to manage their farms effectively and the propensity to consequently focus on the distinction of the farmer population as either financially literate or financially illiterate did not appear to capture the complexity of the phenomenon from my own experience. Over the course of a year prior to commencing this study, a pilot case study was undertaken on my home farm which focused on observing first-hand how the farmer (my father) engaged with financial activities on the farm and the role of financial texts and different stakeholders. This common discourse of farmers having a deficit of financial literacy, coupled with the findings from the pilot case study, highlighted the disconnect between farm level practices, many of which are informal and particular to each farmer, and those supported at an institutional level. It led me to question if we really have a good understanding of what drives financial practices at a farm level and, if we could develop this understanding of the key influences on farmers' financial practices, whether we could use this information to more effectively target and deliver education and policy initiatives to farms?

This led to a personal desire to gain a better understanding of some of the key uncertainties regarding what financial practices farmers actually engage in on their farm and the rationale behind them. For example, why do farmers continue to use a traditional pen and paper approach to their financial records which is in contrast to much of the rest of their farm administration work (e.g. animal management, grassland management)? Who actually undertakes the financial practices on the farm (e.g. farmer, spouse, child) and how are these roles allocated? Why are farmers perceived as being financially illiterate and does this influence the farmers' approach to their own financial practices? The above sample of questions illustrate that this phenomenon is much more than a binary skills based assessment and requires a more socially and culturally sensitive approach to fully understand financial literacy at a farm level.

My personal experience is also supported in the farm management literature with prior studies noting that there is a gap in understanding how and why farmers adopt particular financial management practices and not others (Gloy and LaDue 2003; Byrne et al. 2007; McDonald et

al. 2016). The noted “*individuality of farmers in financial farm management activity*” (Byrne et al 2007, p.15) and the recognition in prior studies of the importance of roles within the farm and the farm household with respect to financial practices (Jackson-Smith et al. 2004), and the importance of the farmer’s identity, motives and values (McDonald et al. 2016; Hilkens et al. 2018) suggest that financial literacy is a more complex social and cultural phenomenon than merely a technical skill. However, despite the repeated calls in the literature, there have been limited qualitative and longitudinal studies exploring the financial literacy practices of farmers in situ. This highlights the potential of a socio-cultural lens to exam financial practices undertaken on farms. The potential of this new approach to understanding farmers’ financial practices provided a core motivation for the development of the research question in this study. Furthermore, the current dominant theoretical approach to understanding financial literacy is rooted in economic and positivist principles. This normative approach to financial literacy focuses on it as an objective and identifiable skill set that is either present or not. Such a conceptualisation of financial literacy creates a distinction between those that are financially literate and illiterate. While this approach to financial literacy has certainly been useful in the identification of macro level issues with financial literacy (for example, see Lusardi and Mitchell (2014) for a full review), it is not as helpful in progressing our understanding of financial literacy practices at an individual level. This requires a more nuanced understanding of the social and cultural influences in context and studies in financial literacy have not undertaken this qualitative research to date.

A final source of motivation for this study came from experts in the farm finance field through a stakeholder focus group held prior to commencing this study. The aim of this focus group was twofold. Firstly, to determine whether or not my experience of farm financial literacy was shared by experts in the field. Secondly, it sought to understand the key issues from a variety of practitioner perspectives including farm advisors, farm finance specialists, banks, and government officials. More details about the participants in this focus group as well as sample evidence of the key issues identified are included in in Appendix A-9. Despite the proliferation of skills-based studies and financial training programmes aimed at farmers, there remains an uncertainty as to how to effective these programmes are at influencing farmer behaviour. A key insight from the stakeholders was the temporal importance in farm financial practices both in the context of annual farm cycles (e.g. timing of accounts preparation) but also in the broader farm lifecycle (e.g. succession, expansion) which can have consequences for the financial practices undertaken on the farm and the targeting of financial education initiatives. The

complex role of farmers' motivations and values was another key issue identified in the focus group. Different motives influence farmers' approaches to the farm financial practices and the overall financial focus taken on the farm. The farmers' view of farming (e.g. as a business or a vocation), succession plans for the farm, existence of off-farm income, and the household dependence on the farm's income were some of the key issues identified in the focus group, however, the exact mechanism through which these issues influence financial practices at a farm level are still not fully understood and have not been addressed in the farm management literature to date.

I think the motivation thing is just key. There's fulltime guys there in enterprises, and particularly the suckler[cattle rearing] side, that could be making a lot more. But it seems that the last euro is not their main driver getting up in the morning and, you know, getting your head around that sometimes is difficult.

Farm Advisor

Thus the motivation for this study originates from a personal, academic and practitioner perspective. The technical side of financial literacy alone is too narrow to understand this complex phenomenon as these technical skills (or lack thereof) are always situated in a particular social and cultural context that needs to be appreciated to understand an individual's financial behaviour. Without a greater understanding of the complexity of the nature of financial literacy and how it manifests itself within different strata of society, little progress can be made at improving the current situation.

1.3 Research Context

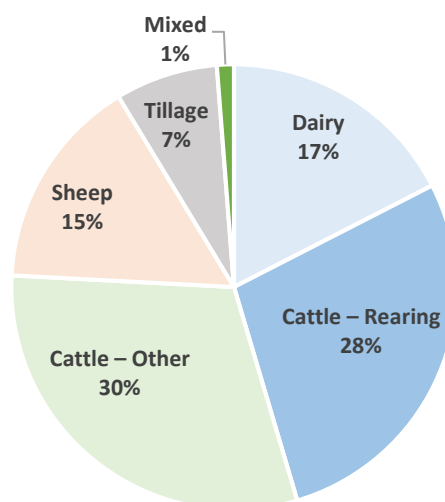
The agri-food sector is Ireland's most important indigenous industry contributing 6.7% of GNI*⁴, employing 164,400 people which represents 7.1% of total employment, and contributing 9.5% of all Irish merchandising exports (DAFM 2020). The sector also plays a vital role in regional development, environmental management, and has an important place in the country's society and culture. There are 137,500 farms in Ireland, of which 99.7% are classified as family farms⁵ (CSO 2016). These farms cover a total agricultural area of 4.8m hectares with an average farm size of 32.4 hectares (DAFM 2020).

⁴ Modified GNI (GNI*) is an indicator designed to exclude globalisation effects that are disproportionately impacting the measurement of the size of the Irish economy.

⁵ Family farms in this context excludes farms run by commercial concerns or institutions

Within the population of Irish farms there is significant variation in the financial situation across different farming systems. This detail is captured each year through the National Farm Survey (NFS)⁶ which has been conducted by Teagasc⁷ since 1972. The survey categorises all farms into one of six farm types: Dairy, Cattle Rearing, Cattle Other, Sheep, Tillage and Mixed Livestock. A “Cattle Rearing” (also known as a suckler) farming system is where cows are calved on the farm and the calves are reared by the cows and then sold by the farmer. The “Cattle Other” farming system would include a variety of systems whereby the farmer purchases cattle (at different ages depending on the system chosen) and finishes them on the farm with no cows being calved. Figure 1.2 below provides an overview of the percentage of farms in each farm type from the 2019 NFS.

Figure 1.2: Irish Farming Systems Overview⁸



Dairy farming, which has seen significant capital investment and growth in Ireland since the abolition of EU milk quotas in 2015, is consistently the most profitable farming enterprise by a significant margin. At the other end of the scale, the traditional farming systems of cattle and sheep farming have low profitability in comparison to dairy and tillage enterprises. The

⁶ The National Farm Survey is operated as part of the Farm Accountancy Data Network of the EU and fulfils Ireland’s statutory obligation to provide data on farm output, costs and income to the European Commission. A random, nationally representative sample, of between 1,000 and 1,200 farms depending on the year, is selected annually in conjunction with the Central Statistics Office (CSO). Each farm is assigned a weighting factor so that the results of the survey are representative of the national population of farms.

⁷ Teagasc – the Agriculture and Food Development Authority – is the national body providing integrated research, advisory and training services to the agriculture and food industry and rural communities

⁸ Teagasc National Farm Survey 2019

variability of the financial situation across farming systems is further highlighted by the reliance each farm type has on direct payments through the EU Common Agricultural Policy or from the Irish Government directly in the form of agricultural schemes. In the case of cattle and sheep farming systems, the data indicates that market income (i.e. farm income before direct payments) is negative, indicating that on average these farms do not make a profit from production and are heavily dependent on additional supports. This variation in financial situation is also evident in the number of farmers across each farming system that have off-farm employment. For cattle enterprises, 40% of farmers have off-farm employment whereas only 12% of dairy farmers were employed off-farm in 2019. The NFS also examines the economic viability⁹ of farms with only 34% of farms operating in a standalone economically viable manner in 2019 and another 33% only economically sustainable due to the presence of off-farm income from either the farm or their spouse (Teagasc 2020). The viability of farms also varies significantly across farming systems with only 13% of cattle rearing farms deemed to be economically viable in comparison to 72% of dairy farms. Table 1.2 below provides a summary of the financial situation of the different farming systems in Ireland from 2019.

Table 1.2: Financial Situation by Farming System¹⁰

Farm System	Avg. Family Farm Income (FFI)¹¹	Direct Payments as a % of FFI	% of Farmers with Off-Farm Income	% of Farms that are Economically Viable
Dairy	€65,828	31%	12%	74%
Cattle – Rearing	€9,008	162%	40%	13%
Cattle – Other	€13,761	129%	40%	24%
Sheep	€14,780	132%	36%	24%
Tillage	€32,700	76%	38%	61%
National Average	€23,578	78%	34%	34%

Land is an important contextual factor in the study of farm enterprises from both a business and cultural perspective. Agriculture is the main land use in the European Union, accounting for more than 48% of the region’s total land area (EU 2018). Access to land is of critical

⁹ A farm business is defined by Teagasc as being economically viable if Family Farm Income is sufficient to remunerate family labour at the minimum wage (which is assumed here to be €20,129 per labour unit), and provide a 5 percent return on the capital invested in non-land assets, i.e. machinery and livestock.

¹⁰ Teagasc National Farm Survey 2019

¹¹ Family Farm Income (FFI) is calculated by deducting all farm costs from total gross output. Family labour is not included as a cost so FFI is the return to family labour, management and investment.

importance for farming enterprises and it is also the largest barrier to entering the European agricultural sector (EIP-AGRI 2016; CEJA and DeLaval 2017; Zagata et al. 2017; Conway et al. 2020). The family farm represents an enduring rural symbol with an important focus put on keeping the farm in the family (Barclay et al. 2005; Gill 2013; Nuthall and Old 2017; Conway et al. 2017) and there is a strong belief amongst farmers that it is their responsibility to pass on what they inherited from previous generations (Gill 2013). This temporal focus on the family farm means that farm land should be viewed as a particular type of asset class that while it may be valuable, such value is rarely used or leveraged as part of farmers' financial decisions. This cultural significance of farm land has meant that less than 1% of the total land area in Ireland being sold on the open market annually (DAFM 2018) and this creates significant challenges for aspiring farmers without an existing family land base to inherit (Cush and MackenWalsh 2016). Furthermore, the cultural attachment to land also creates a unique set of influences that often contradict traditional economic considerations in farmers' decision making to acquire new farm land.

Two other important contextual factors for this research are the age profile and agricultural education uptake of Irish farmers. The age profile of Irish farmers is skewed significantly with only 5% of farmers under 35 years old while 53% of farmers are over 55 years of age, of which 30% are over 65 years of age (CSO 2016). This age profile also influences the agricultural training levels of farmers with 50% of all farmers having either full (24%) or basic (26%) agricultural training¹², in 2013, the most recent data available (Teagasc 2018). This has improved significantly since 1990 when only 10% of farmers had any level of agricultural training and within this overall population the share of young farmers (< 35 years) with some level of agricultural training was approximately 60%, which is above the overall average for all farmers (50%) (Teagasc 2018).

This section provides an overview of the context in which this research takes place. The financial vulnerability and reliance of a significant portion of farming households on other sources of income is of growing concern given the contribution the agri-food sector makes to the overall Irish economy. Food Wise 2025, a ten-year plan for Ireland's agri-food sector, identifies the development of education and training to "*give farmers the tools and skills to develop their business enterprises*" and to ensure "*producers are financially fit*" as a critical element of the overall strategy (DAFM 2015, p. 46). This plan also highlights that "*family*

¹² Full or basic agricultural training definitions are based on EU categorisations (Teagasc 2018). Basic agricultural training is any training courses completed at a general agricultural college and/or an institution specialising in certain subjects. Full agricultural training is any training course continuing for the equivalent of at least two years training after the end of compulsory education and completed at an agricultural college, university or other institute of higher education in agriculture or equivalent.

farms must also increasingly utilise the skills of all family members to assist in the development of their farm business enterprises.” (DAFM 2015, p. 46). This underlies the importance of understanding financial literacy at a farm level to achieve these goals with the focus being placed on the farming family unit rather than just on the individual farmer. The future of Irish farming is at an important inflection point currently with challenges to the expansion of the dairy industry due to environmental concerns, a concern for rural Ireland associated with the decline of the traditional cattle rearing and sheep farming systems, as well as the current negotiations regarding the reform of the Common Agricultural Policy across the EU. All of these factors present a challenging financial landscape for Irish farmers and provide an interesting and relevant context in which to explore financial literacy.

1.4 Research Question

The primary objective of this thesis is to explore *how financial literacy manifests itself in farming enterprises*. It is exploratory based research viewing the financial literacy of farmers as a social practice that is situated within a particular socio-cultural setting. In addressing this research question, this thesis reviews and analyses a number of diverse bodies of literature including literacy as a social practice, financial literacy, farming as a social and cultural practice and farm management. Using the theoretical framework of literacy as a social practice (Barton and Hamilton 1998), the thesis seeks to extend this framework into the domain of financial literacy to take a more socially and culturally sensitive perspective on financial literacy. This framework was chosen as it provides an avenue to answer those questions raised from the researcher’s personal experience on farms, the gaps in the existing literature, and the evidence from key industry stakeholders (see section 1.2). It facilitates the inclusion of heretofore neglected social and cultural dimensions into our understanding of financial literacy on farms including the role of motivation, temporality, institutional influence, power relationships, and the influence of the past. This draws on previous research examining the role of social and cultural influences on farmer decision making (Vanclay 2004) and this thesis seeks to fuse these areas of literature together to establish a theoretical framework to explore financial literacy at a farm level.

1.5 Research Methodology Overview

This thesis adopts a post-positivism paradigm and critical realism ontology as these were determined the most suitable choice to study financial literacy in farming enterprises as a social practice. In recognition of prior theoretical frameworks available in the various bodies of

literature (e.g. literacy as a social practice, farm financial management, farming as a social and cultural activity) that provided initial insights, an abductive qualitative research strategy using both inductive and deductive elements was adopted for this research. The complexity of the phenomena and dearth of qualitative research guided the decision to employ a longitudinal multi case study research design for the empirical investigation.

My background as a qualified accountant and experience in corporate finance with its associated positivist traditions would have normally lent itself to a quantitative research approach to this particular research topic. However, my personal experience of farm accounts and a qualitative pilot case study over a period of twelve months on my own family farm highlighted that financial literacy was not solely a skills based phenomenon as was indicated by the existing literature. Thus this research methodology is motivated by my personal experiences and is focused on the philosophical issues around the nature of financial literacy and the associated language and discourse used to discuss the phenomenon.

Case study is the preferred method to understand complex phenomena in dynamic settings (Eisenhardt, 1989; Stake, 1995). This study explores a contemporary issue within a real-life situation (family based farming enterprises) and uses multiple sources of evidence to understand the phenomenon of study. The case study methodology also allows for a better understanding of the temporal aspects of the phenomenon in contrast to the static focus of previous quantitative studies. Furthermore, in the case of farm management literature, case studies have emerged as an increasingly popular methodological approach to capture the complex nature of farmer behaviour (Macken-Walsh et al. 2012; McDonald et al. 2014; McDonald & Macken-Walsh 2016).

This research utilised a combination of farm advisor discussions, multiple case interviews, archival records (e.g., farm financial records, farm financial statements), informal farmer discussions over the phone and during farm visits, photographic evidence from farm visits and observations gathered over three separate farm visits for each case over the space of a twelve-month period. Overall 11 hours of interviews were recorded resulting in 314 pages of interview scripts while the 15 farm visits in total lasted 24 hours. The data analysis of this study unfolded in several steps; it begins with initial data coding followed by the description of the within-case and cross-case analyses for each of the five cases, which are then compared to existing theoretical frameworks and finally concludes with the development of testable propositions. The data analysis was an iterative process as each tranche of farm visits was complete going back and forth between theory and the empirical material gathered to extend and build new

theoretical insights. The data was analysed following rigorous qualitative techniques that were assisted by the use of the qualitative software (NVivo12) as each farm visit was completed.

1.6 Research Contribution

This section summarises the key contributions of this study to the field of financial literacy. A more detailed discussion of the study's contributions is provided in Chapter 6.

Firstly, this study offers a new and insightful way of looking at financial literacy by conceptualising it as a social practice that must always be studied in context. Such a perspective offers new opportunities for understanding financial literacy within particular socio-cultural settings and by making connections between empirical data and social theory, we can develop a richer and more comprehensive understanding of individuals' financial behaviour and how it is situated in particular times and places. In developing an empirical structure of financial literacy and its dimensions, this study provides an organised and coherent theoretical basis to build future research in the area of financial literacy. Adding to the theoretical and methodological diversity of what is still a young and developing body of literature should help to contribute to a better understanding of financial literacy and, in particular, the social, cultural and temporal aspects of the phenomenon which have heretofore been under-researched.

Secondly, the study provides new theoretical insights on how temporality, role assignment, and power influence farmers' financial literacy practices. Until now, the temporal dimension of financial literacy has been neglected resulting in static analyses being undertaken with little attention paid to the temporal influences of the past and future on current financial literacy practices. This study brings temporality to the forefront of financial literacy studies. The research also enriches the theoretical lens which researchers can examine financial literacy by bringing a focus on the importance of farmer identity and the roles taken within financial literacy events on the farm. Finally, from a theoretical perspective and drawing on literacy as a social practice literature (Papen, 2005), this study also puts a focus on the power relationships that exist between each farm and various stakeholders in the farm financial ecosystem which influence the financial literacy practices at a farm level.

Thirdly, the study provides new empirical evidence of the importance of institutional influence, historical issues, and temporal pressure in understanding the financial literacy practices that farmers engage in. Institutions within the farm financial ecosystem appear to have a significant influence on the financial literacy at a farm level including the timing of financial literacy events as well as on the nature and form of financial information prepared and used at a farm

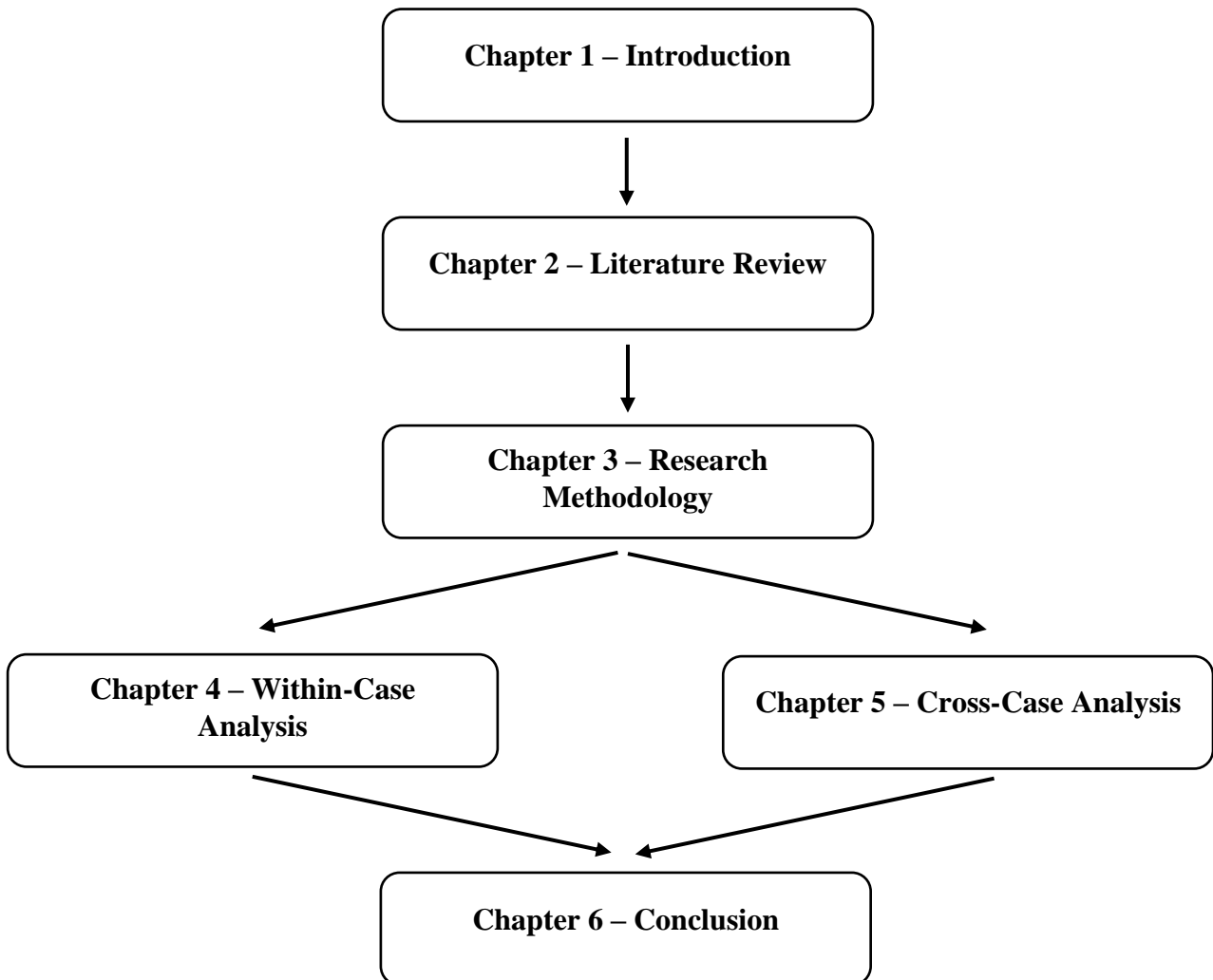
level. The role of institutional influence appears to push formal financial literacy practices onto the farmers which is in contrast to the more informal financial literacy practices observed at a farm level. The financial literacy practices on farms also need to be considered in the context of the history of the farm and the farmer. New financial literacy practices do not appear without context and those practices that were observed over the visits to each farm are heavily influenced by the past. A final key empirical finding is that temporality appears to have a significant influence in how financial literacy manifests itself in the farms studied. The financial literacy practices of the farmers are centred around their management of time across the farming season. The nature of temporality, and the importance of time, has been rarely analysed in the sociological literature relating to farming to date (Gill 2013) and this represents a significant empirical contribution with respect to farm financial literacy practices.

Finally, from a practitioner perspective, this study provides the first farm financial calendar derived from farmers' financial literacy practices and highlights the importance of a social practice, rather than skills driven, approach to farmer financial training. As distinct from a normative approach of examining when farmers *should* be undertaking certain tasks, this study explores *what* is actually happening on farms, *when* it is happening, *who* is involved, *where* does it take place, and *why* it is happening this way. The provision of a simple and practical calendar which identifies some of these key moments can provide farmers and other practitioners a focus point to influence farmer financial literacy practices. Furthermore, this study highlights that the traditional linear focus of financial education to improve a particular skillset which will then result in improved financial behaviour is overly simplistic given the findings in this study. Education programmes need to be practice, rather than skill, driven with a focus on understanding why participants are engaging with the programme and what do they want to achieve. Farmer discussion groups are an important social innovation in this context that can be used to drive these new ideas and practices and further examination of these are needed so that farmers, advisors, and policymakers can fully utilise this important medium. Furthermore, the success of these group forums and the informal and social learning environments they provide for participants must be balanced with the privacy and sensitivity that is associated with the financial aspects of farming which can limit the discussions relating to these topics in group situations.

1.7 Structure of the Thesis

This thesis comprises of six chapters as outlined in Figure 1.3 and discussed in more detail below.

Figure 1.3: Structure of Thesis



Chapter 1: Introduction

Chapter 1 provides an overview of the research background and problem, the research question, the methodological approach followed, the contributions and the scope of the research.

Chapter 2: Literature Review

Chapter 2 provides a discussion of the theories that informed the study including traditional financial literacy, farming as a social and cultural practice and farm management. The chapter then discusses the theoretical lens adopted for this study - literacy as a social practice. The chapter also provides an overview of the theoretical framework in the form of Barton and Hamilton's (1998) six propositions of literacy as a social practice and sets out how this can be extended to the domain of financial literacy.

Chapter 3: Research Methodology

Chapter 3 outlines the research methodology. It begins with an overview of the philosophical considerations concerning ontological and epistemological choices. This is followed by a discussion of the rationale for the adoption of the qualitative strategy, in contrast to the dominant paradigm in the financial literacy literature. Next, the choice of multiple case study method for this thesis is justified. The approach to case selection and data collection paves the way for an in-depth discussion of the data analysis. The chapter concludes by discussing measures to ensure the validity of the research is maintained, how ethical considerations were addressed and the limitations of the methodology adopted.

Chapter 4: Within-Case Analysis

Chapter 4 presents the first part of the analysis, the within-case analysis. This chapter consists of an in-depth study of each of the five cases. This analysis involved a detail description of each case with a particular focus on the main financial literacy event in the farming year. The common financial literacy event of preparing the annual farm accounts provides a baseline for the comparison of the financial literacy practices on each farm. In addition to this, other contextual issues relating to financial literacy in the cases were identified and discussed in detail.

Chapter 5: Cross-Case Analysis

Chapter 5 presents the second part of the analysis, the cross-case analysis. Emerging themes in each case study were repeatedly compared across all cases to examine consistencies (and inconsistencies). These emerging patterns across the cases were then compared with the extant literature and research framework to understand how they fit into the overall analysis. Recurrent patterns provided support and validity to emerging themes across the cases which in turn provided insights into answering the overall research question. These patterns were then used in the development of a set of propositions relating to the research framework, as outlined in Chapter 5.

Chapter 6: Contributions and Conclusions

Chapter 6 discusses the key contributions of this study as well as outlining the potential avenues for future research. Initially, a discussion of the key contributions is provided including theoretical, empirical, contextual, and methodological. The chapter continues with a discussion of implications for practice, limitations of this study and suggestions for future research. The chapter finishes with a brief conclusion.

In addition to the above chapters, the thesis also includes a comprehensive set of appendices that details information on:

- Samples of participant communications;
- Interview protocols;
- Samples of NVivo analysis;
- Research ethics forms; and
- Key stakeholder focus group evidence.

The next chapter provides an overview of the relevant bodies of literature that informed this thesis.

Chapter 2 – Literature Review

2.1 Introduction

In contrast to the prevailing autonomous model, this study posits that financial literacy is a social practice that is always contextualised and situated within a particular socio-cultural setting. The cross-disciplinary nature of the research question in this study means that diverse bodies of literature are drawn on including financial literacy, farm management, farming as a social and cultural practice, and literacy as a social practice. The intersection of these bodies of literature provide the theoretical foundations of the framework developed and implemented in this thesis.

Chapter 2 is organised as follows: Firstly, an overview of the existing financial literacy literature is provided in section 2.2. Section 2.3 is devoted to examining previous research in farm financial management and farming as a social and cultural activity. Section 2.4 introduces the concept of literacy as a social practice and demonstrates how this has been employed in other contexts. Section 2.5 discusses the framework of financial literacy as a social practice on farms and how it was informed from the existing literature. Finally, section 2.6 provides a summary for the chapter.

2.2 Financial Literacy

The terms financial literacy, financial knowledge, financial capabilities, financial awareness and financial education are commonly used interchangeably in the literature when referring to the concept of the ability to understand and apply financial principles and practices in a variety of contexts. This heterogeneity in terminology reflects a lack of consensus in terms of what financial literacy means and its various components (Huston 2010). Despite the progress in the financial literacy literature, there remains much debate surrounding the development of a universal construct and definition of financial literacy (Hung et al. 2009; Huston 2010; Remund 2010).

Despite the heterogeneity in the definitions presented in Table 2.1, all conceptualise financial literacy as a skills based phenomenon with a focus on the cognitive ability of the individual illustrated by the use of key terms such as “ability”, “knowledge”, “skills”, and “understanding”. Some definitions also include psychological elements, particular regarding the confidence of the individual or dealing with discomfort in discussing financial issues

(Anthes 2004; OECD 2005; US AID 2009; Redmund 2010). Only in more recent years has the focus turned towards financial literacy in an entrepreneurial context and although the literature is still quite sparse in this area (Calcagno et al. 2019), a number of authors have sought to adapt the financial literacy definition for this domain. Consistent with the definitions in a personal finance context, the definitions of financial literacy in MSMEs remain skills focused but there is an acknowledgement of the temporal aspect of financial literacy and, in particular, the different stages of the life cycle of the enterprise (US AID 2009; OECD 2015; Eniola and Entebang 2017). Across all the definitions, financial literacy is seen as a uniform concept devoid of any context with no consideration of the social or cultural context of use in any of the definitions presented. This reflects the dominant philosophical stance in the financial literacy literature to date which, as Bay et al. (2014) suggest, is summarised in three key assumptions regarding financial literacy; (i) it is a stable concept that can be objectively measured and compared across populations; (ii) the skills underlying the notion of financial literacy can predict individuals' financial behaviours; and (iii) financial education can assist an individual acquiring these relevant skills and becoming financially literate.

Unlike the substantial body of theoretical and empirical work on the economics of education (Glewwe 2002; Hanushek and Woessmann 2008), there has been a deficit of research devoted to the issue of how people acquire and deploy financial literacy (Lusardi and Mitchell 2014). However, a number of papers have examined this issue in recent years by looking at the decision to acquire financial literacy and its links with saving and investment behaviour from a theoretical perspective (Delavande, Rohwedder and Willis 2008; Jappelli and Padula 2013; Lusardi, Michaud and Mitchell 2013; Lusardi and Mitchell 2014). Much of this research has been based on the seminal work of Ben-Porath (1967) and Becker (1975) in the area of human capital, where the economic decision to invest in human capital was examined by linking education to wages (Lusardi, Michaud and Mitchell 2013). Delavande, Rohwedder and Willis (2008) and Jappelli and Padula (2013) both developed theoretical models that treat financial knowledge as a form of human capital and the acquisition of knowledge as an investment. Lusardi, Michaud and Mitchell (2013) developed a dynamic multi-period life cycle model that endogenizes the decision to acquire financial knowledge. These studies have provided the theoretical foundation for financial literacy studies to date.

Table 2.1: Financial Literacy Definitions ¹

Publication	Conceptual Definition	Context	
		PFL	MSME
Noctor et al. (1992)	“the ability to make informed judgements and decisions regarding the use and management of money”	X	
Mason and Wilson (2001)	“an individual’s ability to obtain, understand and evaluate relevant information necessary to make decisions with an awareness of the likely financial consequences”	X	
Anthes (2004)	“the ability to read, analyse, manage and communicate about personal financial conditions that affect material well-being.....the ability to discern financial choices, discuss money and financial issues without (or despite) discomfort, plan for the future.”	X	
OECD (2005)	“.... the combination of consumers’/investors’ understanding of financial products and concepts and their ability and confidence to appreciate financial risks and opportunities, to make informed choices, to know where to go for help and to take other effective actions to improve their financial well-being.”	X	
Marcolin and Abraham (2006)	“the ability of managing money effectively and efficiently on financial decision making processes”	X	
US AID (2009)	“someone who knows what are the most suitable financing and financial management options for his/her business at the various growth stages of his/her business; knows where to obtain the most suitable products and services; and interacts with confidence with the suppliers of these products and services. He/she is familiar with the legal and regulatory framework and his/her rights and recourse options.”		X
Remund (2010)	“A measure of the degree to which one understands key financial concepts and possesses the ability and confidence to manage personal finances through appropriate, short-term decision-making and sound, long-range financial planning, while mindful of life events and changing economic conditions.”	X	
Lusardi and Mitchell (2014)	“....peoples’ ability to process economic information and make informed decisions about financial planning, wealth accumulation, debt, and pensions.”	X	
OECD (2015)	“..a combination of knowledge, skills and practice of financial products, concepts, risks, and regulatory and legal matters to make the most appropriate finance-related decisions at every stage of SME life-cycle to ensure further business development, growth and profit generation of the firm”		X

Adomako, Danso and Damoah (2016)	“the attainment of knowledge and skills to manage finances, utilise financial services and plan the consumer market effectively to achieve the financial objectives of a firm”		X
Eniola and Entebang (2017)	“the capability to adequately oversee financial resources over the life cycle and connect effectively with financial products and services”		X
OECD (2018)	“the combination of awareness, knowledge, skills, attitudes and behaviour that a potential entrepreneur or an owner or manager of a micro, small or medium sized enterprise should have in order to make effective financial decisions to start a business, run a business, and ultimately ensure its sustainability and growth”		X

¹ For a more comprehensive review of the literature on financial literacy definitions in a personal finance context see Hung et al (2009), Huston (2010) and Remund (2010)

They are rooted in economics and human capital literature with the dominant approach of viewing financial literacy as a phenomenon that can be acted upon and solved by means of technical skills (Bay et al. 2014). There is a notable lack of theoretical diversification in the literature to date which, in part, can be attributed to the relatively young age of this body of literature as discussed in Chapter 1.

Empirical studies on financial literacy have also raised questions that have yet to be satisfied by these theoretical models of financial literacy (Lusardi and Mitchell 2014). The financial literacy literature to date has been dominated by three core areas of focus (Almenberg and Widmark 2011; Bay et al. 2014). The first can be described as demography studies of financial literacy. These focus on measuring financial literacy and comparing these results across different geographical regions and demographics of populations. Recent research has tended to use three core questions (often referred to as the “Big Three”) to measure financial literacy (Lusardi and Mitchell 2008, 2011) which focus on numeracy, inflation and diversification.

These three questions are presented below from Lusardi and Mitchell (2011);

Question 1

Suppose you had \$100 in a savings account and the interest rate was 2 percent per year. After 5 years, how much do you think you would have in the account if you left the money to grow?

- More than \$102;**
- Exactly \$102;
- Less than \$102;
- Do not know;
- Refuse to answer.

Question 2

Imagine that the interest rate on your savings account was 1 percent per year and inflation was 2 percent per year. After 1 year, how much would you be able to buy with the money in this account?

- More than today;
- Exactly the same;
- Less than today;**
- Do not know;
- Refuse to answer.

Question 3

Do you think that the following statement is true or false? “Buying a single company stock usually provides a safer return than a stock mutual fund.”

- True;
- False;**
- Do not know;
- Refuse to answer.

In general, financial literacy levels are low across the world (Hilgert et al. 2003; Lusardi and Mitchell 2011; Alessie, Van Rooij, and Lusardi 2011; Fornero and Monticone 2011; Lusardi and Mitchell 2014; Klapper and Lusardi 2020). Studies have also found significant differences in financial literacy across age groups (Lusardi and Mitchell 2011; Klapper and Lusardi 2020), gender (Lusardi, Mitchell, and Curto 2010; Lusardi and Mitchell 2009; Lusardi and Tufano 2009; Klapper and Lusardi 2020), education attainment (Lusardi and Mitchell 2007, 2011), and race and ethnicity (Lusardi and Mitchell 2007, 2011).

The second focus of the literature is on examining the impact of financial literacy on financial decisions. Bernheim (1995, 1998) was one of the first to show that most households lack basic financial knowledge and that their saving behaviour is based on crude rules of thumb. Hilgert, Hogarth, and Beverly (2003) find a strong correlation between financial literacy and day-to-day financial management skills. Studies have also shown that financial literacy increases participation in financial markets and investment in stocks (Christelis, Jappelli, and Padula 2010; Yoong 2011; Almenberg and Dreber 2011; Almenberg and Widmark 2011; Van Rooij et al. 2011; Arrondel et al. 2012), is positively correlated with planning for retirement, savings and wealth accumulation (Lusardi and Mitchell 2007; Hastings and Mitchell 2011; Van Rooij et al. 2012), can be linked to holding precautionary savings (de Bassa Scheresberg 2013), and can influence the demand for professional financial advice (Calcagno and Monticone 2015). Studies in financial literacy have also examined debt related behaviour and find that the least financially literate individuals are also more likely to have costly mortgages (Moore 2003), and pay higher fees and use high-cost borrowing (Lusardi and Tufano 2009). Stango and Zinman

(2009) also find that those individuals who are unable to correctly calculate interest rates out of a stream of payments end up borrowing more and accumulating lower amounts of wealth.

The final area of focus in the literature is the study of the effect of financial education on individuals' financial behaviour. (Lyons et al. 2006; Oehler and Werner 2008; Lusardi and Mitchell 2007; Willis, 2008; Collins and O'Rourke 2010). A key debate in this area of literature is whether financial illiteracy can be overcome through effective financial education programmes. Studies to date on the effectiveness of financial education programmes have provided contradictory results (Lusardi and Mitchell 2014; Alsemgeest 2015) with some researchers claiming that there is a link between financial literacy education and the resultant financial behaviours, whereas others have not found any evidence proving the connection. As noted by Lusardi and Mitchell (2014), while significant time has been devoted to examining the effectiveness of financial education programs in a variety of settings, relatively few studies have been informed by either a suitable theoretical model or a carefully-designed empirical approach.

2.2.1 MSME Financial Literacy

In examining MSME financial literacy we must consider another closely related body of literature; financial management in MSMEs. Although focusing on similar underlying concepts, financial management is not the same as MSME financial literacy. Financial management is a critical component in the management of MSMEs as it can have a significant influence on business growth, access to finance, performance, and survival. It encompasses a broad range of activity domains including acquiring external financial resources (e.g. debt and/or equity fundraising), analysing the use of resources (e.g. financial planning and control), monitoring liquidity levels (e.g. cashflow management), and compliance with regulatory requirements (e.g. tax and financial reporting) (Mian 2001; Horngren, Foster, Datar, & Rajan 2008; Brinckman et al. 2011). Section 2.3 discusses financial management in more detail in the context of farming enterprises.

There have been a number of studies regarding the financial management practices in MSMEs (e.g. McMahon and Holmes 1991; McMahon 2001; Brinckmann et al. 2011) with the majority of such studies focussing on benchmarking the financial management practices of MSMEs in comparison to textbook best practices. In general, the concept of financial management has derived from large firm studies where the viewpoint of the entity has taken a particular set of

features including the presence of a variety of stakeholders, capital markets influence, separation of ownership and management and, most importantly, an implicit assumption of financial literacy. However, such features and assumptions are not always appropriate when looking at MSMEs and an alternative perspective is required (Ang 1991, 1992; Gibson 1992). This is consistent with Collins and Jarvis (2002, pg. 109) who find that “...*from a financial management perspective, the behaviour of the owner-managers of the small companies studied does not match the large company template*”. The concept of financial literacy is one such alternative perspective that can provide a more granular insight and understanding into the financial practices in MSMEs. Despite this potential, there have been limited studies of financial literacy in an entrepreneurial context (Calcagno et al. 2019) in contrast to the focus on the topic of financial management.

The majority of the previous studies that have focused on MSME financial literacy, as outlined in Table 2.2, have been based in developing countries. Fatoki (2014) examined the level of financial literacy of micro entrepreneurs in South Africa. The study used a self-administered questionnaire to assess the financial planning, analysis and control, bookkeeping, understanding of funding sources, business terminology, finance and information skills, access to technology and risk-management to determine a measure of financial literacy. Overall, it was found that there were low levels of financial literacy amongst the owners of new micro enterprises. Oseifuah (2010) also looks at the level of financial literacy in South Africa amongst a subset of MSMEs, specifically youth entrepreneurs. financial literacy was measured using a questionnaire with questions on mathematical and computer literacy, financial attitude, financial knowledge, and financial behaviour. The study finds the financial literacy levels of youth entrepreneurs are above average but warns against extrapolating such findings to a more generalised setting due to the low sample size.

The level of financial literacy among MSMEs was also examined in Ghana where Nunoo and Andoh (2012) developed a conceptual model of the relationship between financial literacy and the sustainability of MSMEs through financial participation (i.e. financial services utilisation). In measuring financial literacy, the authors create a custom scale based on the score on 5 quiz-like statements covering interest rates, inflation, savings and insurance. The study found that the general level of financial literacy amongst MSMEs is modest and that financial literacy of owners of MSMEs is critical in explaining utilisation of financial services by MSMEs. The study also looks at the determinants of MSME financial literacy and find that the gender of the owner of the MSMEs, secondary/technical level education as well as receiving financial

education were statistically significant in explaining MSME financial literacy. Bayrakdaroglu and San (2014) also examine the impact MSME financial literacy has on financial market participation and find that MSMEs with higher levels of financial literacy exhibit greater financial market participation. In measuring financial literacy, the study looks at both subjective, using self-evaluated seven point Likert type scale, and objective, using a financial literacy index of six quiz-like questions, measures of financial literacy. Finally, consistent with Nunoo and Andoh (2012), the authors also find that receiving financial education improves the level of MSME financial literacy.

Adomako and Danso (2014) look at a different aspect of the impact of SME financial literacy, that of firm performance. The authors suggest that the impact of financial literacy on firm performance is moderated by the resource flexibility and financial capital availability in the firm. The study finds that SME financial literacy in Ghana, as measured by a questionnaire focused on use of financial statements, improves financial performance and particularly so when resources are flexible and when entrepreneurs are able to access finance with ease. These findings are consistent with Engstrom and McKelvie (2017) who find that financial literacy is an important predictor of financial performance in micro enterprises in Ecuador. Both Bongomin et al. (2017) and Adomako et al. (2016) examined the moderating impact of financial literacy on the relationship between access to financial and firm growth in Uganda and Ghana respectively. Both studies come to similar conclusions about the importance of financial literacy in helping firms to deploy its financial resources to improve its growth. Financial literacy has a positive moderating effect on the relationship between access to finance and growth of SMEs in both developing economies.

Although limited in number, the studies focussing on MSME financial literacy in developed countries also find a strong relationship between financial literacy levels and firm behaviour and/or performance. Wise (2013), focusing on youth entrepreneurs in Canada, finds that an increase in financial literacy levels led to more frequent production of financial statements, a higher probability of loan repayment and a lower probability for involuntary new venture closure. Dahmen and Rodriguez (2014), in a US context, find a clear connection between inadequate financial literacy and financial difficulties experienced by entrepreneurs. Using an interview based approach with 14 small businesses, they find a strong association between inadequate financial literacy and the avoidance of the preparation and/or use of financial statements in the business.

The OECD recently developed a core competency framework on financial literacy for MSMEs and potential entrepreneurs (OECD 2018) and followed this with a survey instrument to measure MSME financial literacy (OECD 2019). This survey instrument focuses on the owners of these enterprises, not the MSME as a whole, and has a broad range of questions covering knowledge and use of financial products, managing business finances, financial knowledge and attitudes, and financial education. An initial pilot study across seven countries was undertaken with the survey instrument and while financial literacy appeared to be correlated with the experience of entrepreneurs and their families, gender, and participation in training, there was no correlation between financial literacy and other characteristics, such as business size, the level or type of education of the business owner, and other measures of business performance (OECD 2019).

In sum, despite the dearth of research in the area to date (Calcagno et al. 2019), studies of financial literacy in an MSME context adopt a similar conceptualisation – that of financial literacy as a skills-based phenomenon. The core themes of the literature also follow a similar pattern including: (i) measuring and identifying the prevalence of financial (il)literacy amongst MSMEs; (ii) examining the relationship MSME financial literacy has with MSME decision making and performance; and (iii) examining the determinants of MSME financial literacy. This thesis was designed to further the understanding of financial literacy. The ontological and epistemological positions rooted in positivism that dominate the current financial literacy literature provide a narrow theoretical perspective on what is still a relatively young discipline. Providing some theoretical diversification and introducing a more socially and culturally sensitive lens to examine financial literacy can complement the traditional economic focus heretofore and further help address the current gaps in the literature as outlined above.

Table 2.2: Studies of MSME Financial Literacy

Authors	Journal/Conference & Year	Focus	Construct of Financial Literacy	Definition of Financial Literacy
US Aid	Policy Report; 2009	SMEs; South Africa	SME financial literacy consists of three building blocks; consumer financial education, enterprise financial education and financial business development skills. Focus is on individual owner/manager of the SME.	“A financially literate SME owner/manager knows what are the most suitable financing and financial management options for his/hers business at the various growth stages of the business; s/he knows where to obtain the most suitable products and services; and s/he interacts with confidence with the suppliers of these products and services. S/he is familiar with the legal and regulatory framework and hi/hers rights and recourse.”
Oseifuah	African Journal of Economic and Management Studies; 2010	Youth Entrepreneurs; South Africa	Financial literacy having two dimensions; knowledge and actions	References Noctor (1992) and OECD (2005) definitions but does not provide own definition. Discusses four key elements of financial literacy including numeracy, financial knowledge, financial competence in understanding basic financial services issues and financial responsibility in terms of making choices regarding financial issues.
Nunoo & Andoh	Agricultural and Applied Economics Annual Meeting; 2010	SMEs; Ghana	Develops a general construct of financial literacy to include financial knowledge, skills and confidence	“The knowledge of basic economic and financial concepts, as well as the ability to use that knowledge and other financial skills to manage financial resources effectively for a lifetime of financial well-being”

Wise	International Journal of Business & Management; 2013	New Ventures; Canada	Develops a financial literacy model which proposes that an increase in familiarity with financial statements and financial ratios leads to an increase in financial literacy.	References Noctor et al. (1992) and Anthes (2004) definitions but does not provide own definition.
Adomako & Danso	International Journal of Management & Organisational Studies; 2014	SMEs; Ghana	No development of construct	No definition provided
Bayrakdaroglu & San	International Strategic Management Conference; 2014	SMEs; Turkey	No development of construct	References Marcolin & Abraham (2006) definition but does not provide own definition
Fatoki	Journal of Social Sciences; 2014	Micro Entrepreneurs; South Africa	No development of construct	References USAID (2009) definition but does not provide own definition
Dahmen & Rodriguez	Numeracy; 2014	SMEs; US	No development of construct	References Redmund (2010) definition but does not provide own definition
OECD	OECD Working Group on Access to Finance for Agribusiness; 2015	Agribusiness SMEs; Ukraine	Provides a schematic relationship between financial education, financial literacy and use of financial services and products. Financial literacy has a number of aspects including awareness, knowledge, skill, attitude and behaviour. Focus is on individual making financial decisions in the SME.	“..combination of knowledge, skills and practice of financial products, concepts, risks and regulatory and legal matters to take the most appropriate finance-related decisions at every stage of SME life-cycle to ensure further business development, growth and profit generation of the firm”

Adomako, Danso & Damoah	Venture Capital; 2016	SMEs; Ghana	No development of construct	“the attainment of knowledge and skills to manage finances, utilise financial services and plan the consumer market effectively to achieve the financial objectives of a firm”
Engstrom & McKelvie	International Small Business Journal; 2017	Micro Entrepreneurs; Ecuador	Viewing financial literacy as a specific form of human capital	No definition provided
Eniola & Entegang	Global Business Review; 2017	SME O/M; Nigeria	Provides a construct of the relationship between financial literacy and firm performance. This includes financial knowledge, financial attitudes and financial awareness.	“the capability to adequately oversee financial resources over the life cycle and connect effectively with financial products and services”
Bongomin, Ntayi, Munene & Malinga	Review of International Business Strategy; 2017	SMEs; Uganda	No development of construct	No definition provided

2.3 Farm Financial Management

Financial management is recognised as a distinct field of farm management (Boehlje and Eidman 1984; Shadbolt and Bywater 2005; Hilkens et al. 2018). The dominant focus in these studies has been positivist in nature tending take a normative approach to examining whether the farm adopted particular “best practice” financial management practices and relating this to the farm’s financial performance and structure (Gloy and LaDue 2003; Gloy et al 2002; Byrne et al. 2003; Byrne et al. 2007). Some of these studies have found a low level of uptake of financial management technologies and practices to assist in decision making at a farm level (Byrne et al. 2003, McDonald et al. 2016). Specific concerns about farmers’ level of financial knowledge and financial literacy (either self-reported or determined using a financial questionnaire) and the barrier this represents with respect to the adoption of more formal financial practices at a farm level have also been noted (Jackson-Smith et al. 2004; Halabi and Carroll 2015; McDonald et al. 2016).

Prior studies have also acknowledged that there is a gap in understanding how and why farmers adopt particular financial management practices and not others. (Gloy and LaDue 2003; Byrne et al 2003; Argiles and Slof 2003; Byrne et al. 2007; McDonald et al. 2016). Byrne et al. (2007, p.15) note the “*individuality of farmers in financial farm management activity*”. Some prior findings also point to a more complex social and cultural phenomenon taking place that merits further examination through a qualitative research approach. For example, Jackson-Smith et al. (2004) note the important role of spouses in collecting and maintain financial records on farms but that they are much less involved in the actual financial analysis of any information collection or in attending any financial management training programmes. These findings are consistent with Carnegie et al. (2020) who find that women generally play a leading role in managing day-to-day finances on the farm while men lead agricultural decision-making. This suggests that the roles played in the farming household (e.g. in record keeping, decision making, use of farm technologies) could be an important factor to understand when examining the financial practices on farms. Hilkens et al (2018) find that being good at financial management is not central to a farmer’s identity and that there is a sensitivity and taboo around the topic which influences the low level of interest in financial management and the demand for financial advice. The authors also note the importance of understanding the role of authority and power between farmers and their banks and the influence this can have on financial management on farms.

Byrne et al. (2003) observed that while the majority of farmers studied complete annual farm accounts, financial management was rarely used to improve decision-making within the farm business. A similar insight noted by McDonald et al. (2016) further highlights the importance of gaining an understanding of complex motives and values of farmers at a more detailed level than has been done before in previous farm financial management studies. The authors note that the top three farm objectives of farmers surveyed were financial in nature (maximising profit, financial security and reducing financial risk). Despite this clear financial focus of the farmers surveyed, the authors find that the farmers do not use available financial management technologies as an aid to management accounting and decision-making within their businesses nor are existing financial management supports widely understood or valued, even among younger and more highly educated farmers. The authors also note that it is evident that research, extension and education providers must re-engage with and prioritise the development of simple farm financial management decision support technologies. Hayden (2017, 2021) also explores the financial decision making of Irish farmers and finds that non-financial factors influence financial decision making heavily, farmers often outsource financial management to external experts whom they defer to for advice, and that many farmers appeared to rely on intuition in their financial decision making rather than any formal financial analysis.

Despite the repeated calls in the literature, the dominant normative focus in farm financial management studies to date has led to gaps in the understanding of what financial practices farmers actually undertake, as opposed to what they should, and why. A small number of studies have started to examine this from a qualitative perspective (Hayden 2017, 2021; Hilkens et al. 2018) which highlight the potential of a more socially and culturally sensitive lens to exam financial practices undertaken on farms. The potential of this new approach to understanding farmers' financial practices provided a core motivation for the development of the research question in this study.

2.3.1 Farming as a Social and Cultural Practice

An important body of literature in agricultural studies examines non-economic influences on farmer's decision making. As far back as Simon's (1957) 'satisficing' concept, it was acknowledged that people do not necessarily focus on optimal economic decision making, but instead may optimise social or intrinsic goals. This framework challenged the rational economic basis on which agricultural decision making had been viewed until then. It opened the door for Gasson's (1973) exploration of goals and values to explain farmers' non-profit-

maximising behaviour and Wilcock et al's (1999) model of farmer behaviour incorporating farmers' attitudes, goals, and behaviours, which two of the seminal studies in this area.

As noted by Burton (2004), as part of this move towards a more sociological perspective on agricultural behaviour saw the emergence of the 'cultural turn' in the late 1980s and 1990s. This 'cultural turn' in the literature focuses on the importance of understanding language, meaning, representation, identity, and difference (Barnett 1998; Valentine 2001) as well as advocating the use of qualitative methodologies (Burton 2004). This movement in the literature acknowledge that other forms of capital exist in farming activities and that a broader focus than just the economic rationale for farmers is required to fully understand farmer behaviour. To conceptualise non-economic rewards in farming, Burton (2008) applies Bourdieu's (1983, 1998) theory of capital as a framework which proposed the existence of capital in three fundamental forms: as economic capital (material property), social capital (networks of social connections and mutual obligations) and cultural capital (prestige). Vanclay (2004) also notes that farming is an embedded social and cultural activity and a better understanding is needed of the economic, social, and cultural influences on farm practices. These practices undertaken by farmers are *"physical manifestations of the cultural expressions which are loaded with social meanings and significance, they are not solely technical"* (Vanclay 2004, p.222).

This body of literature points to the importance of exploring farming as a social and cultural practice to understand farmers' practices. The absence of previous studies exploring farmers' financial practices using this theoretical lens highlights an important gap in the literature that informed this study's research question.

2.4 Literacy as a Social Practice

The concept of literacy as a social practice first emerged in the literature in the 1980s. In contrast to the tradition at the time of viewing literacy as discrete set of skills around the ability to read and write, researchers such as Heath (1983) and Street (1985) began to focus on the sociological and cultural aspects of literacy and how all uses of written language can be seen as located in particular times and places (Barton and Hamilton 1998). This work emerged from a variety of disciplines including education, sociology, linguistics, history, anthropology, and cultural psychology which converged towards a shared view about literacy (Gee 2015).

This new perspective on literacy studies became known as New Literacy Studies ("NLS") which Papen (2005) notes is characterised by two main features; firstly, literacy is a culturally

embedded practice rather than an individual technical skill; and secondly, literacy should be examined as part of everyday life to understand the uses and meanings of literacy as opposed to formal education settings and teaching issues. NLS opposed the then traditional psychological approach to literacy which viewed literacy as a ‘mental’ or ‘cognitive’ phenomenon and thus reading and writing were treated as things people did inside their heads (Gee 2015). Their argument was that the previous understanding of literacy downplayed the social setting in which literacy is observed (Gee 2008). Instead, NLS viewed literacy as primarily a sociocultural phenomenon, which is centered in social and cultural practices (Gee 2015). In this approach, literacy is what people do, not what they learn (Barton and Hamilton 1998).

“Literacy is not simply knowing how to read and write a particular script, but applying this knowledge for specific purposes in specific contexts of use”

Barton (1994, p. 24)

This movement represented a fundamental shift in the conceptualisation of literacy and with it required new approaches to its study. The focus on literacy as a social practice meant that literacy needed to be studied in context to understand how it is embedded in practice. The distinction between a “practice” and a “social practice” is an important one in the context of this study. Focusing on a practice – without the “social” – infers a technical and static activity that is devoid of social influence. However, the social practice perspective involves a dynamic and interactive view of literacy and its various influences. While a particular literacy activity may be undertaken individually, it is still shaped by social and cultural influences and thus should be viewed as a social practice. Thus the focus must not only just be cognitive, but social, cultural, historical and institutional as well (Gee 2015). The approach led to a distinction being made between “autonomous” and “ideological” models of literacy (Street 1985). The traditional view of literacy, before NLS, was that of the autonomous model of literacy which worked off the assumption that literacy in itself – autonomously – will have effects on other social and cognitive practices. (Street 2004). Following this model of literacy would mean the ability to distinguish between literate and illiterate individuals and that efforts to improve the literacy of illiterate people will improve their cognitive skills and ability to contribute to society, independent of the context in which this takes place (Street 2004). The alternative to the autonomous model of literacy is the ideological model which offers a more socially and culturally sensitive view of literacy practices as they vary from one context to another. (Street

1988). This model is based on the premise that literacy is a social practice, not simply a technical and neutral skill; that it is always embedded in socially constructed epistemological principles. (Street 2004) This model attempts to understand literacy in terms of social practices and to theorize it in terms of the ideologies in which different literacies are embedded (Gee 2015). In this model, literacy does not autonomously effect other practices as it itself is always embedded in a particular social context. Therefore, the definition of a literate or illiterate person in this model is not universal, as it will depend on the context in which that literacy is being used. In this model, literacy is always being contested, in terms of its meanings and practices, and hence particular versions of it are always 'ideological', they are always rooted in a particular view of how the world operates and which literacies should dominate (Street 2003). Thus the distinction between the autonomous and ideological models of literacy represents the core challenge by NLS to the existing literacy literature. Street (1988) argues that the autonomous model, while purporting that literacy is a neutral disguises its cultural and ideological assumptions that underpin it. Street (2004, p.2) notes that this model "*is simply imposing western conceptions of literacy on to other cultures or within a country those of one class or cultural group onto others*".

These models of literacy also led to the development of a new approach to studying literacy. The nature of the ideological model of literacy, where literacy is a socially situated issue and differs from culture to culture and across time periods, means using "literacy" as a universal and standard unit of analysis, as was done in traditional literacy studies using the autonomous model, would be problematic (Street 2004). This led to development of "literacy events" and "literacy practices" as a means to study literacy (Street, 1988). Literacy events are activities where literacy plays a role (Heath 1983; Barton 1994; Barton and Hamilton 1998; Street 2004) and, as noted by Barton (1994), this concept derived from the sociolinguistic idea of speech events. These events are observable episodes which arise from practices and are shaped by them (Barton and Hamilton 1998). This highlights the situated nature of literacy as it always exists in a particular social and cultural context (Barton and Hamilton 1998). As such, literacy events are historically and contextually situated and always embedded in broader goals that serve overarching purposes. Literacy practices are, according to Barton and Hamilton (2000, p.7), "*what people do with literacy*". However, unlike literacy events, literacy practices are not observable units of behaviour since they incorporate values, feelings, social relationships and attitudes (Street 1993; Barton and Hamilton 1998). Literacy practices are "*cultural ways of utilising literacy*" (Barton and Hamilton 2000, p.8). Thus the concepts of literacy events and

literacy practices offer a powerful way of exploring literacy as a social practice and provide the two basic units of analysis for a social theory of literacy, (Papen 2005). In operationalising the social practice theory of literacy, Barton and Hamilton (1998) provide six theoretical propositions about the nature of literacy, as outlined in Table 2.3 below. This framework starts with the assertion that literacy is a social practice and the propositions are an elaboration of this (Barton and Hamilton 1998). The framework operates on the basis that the basic unit of a social theory of literacy are literacy practices. Thus the core approach to understanding literacy from this theoretical perspective is to explore literacy events and the associated literacy practices in context.

Table 2.3 - Literacy as Social Practice Framework

Dimensions	Literacy as Social Practice
1. Social Practices	Literacy is best understood as a set of social practices; these can be inferred from events which are mediated by written texts
2. Concurrent Literacies	There are different literacies associated with different domains of life
3. Institutional Influence	Literacy practices are patterned by social institutions and power relationships, and some literacies are more dominant and influential than others
4. Socio-cultural Context	Literacy practices are purposeful and embedded in broader social goals and cultural practices
5. Historical Context	Literacy is historically situated
6. Temporal Context	Literacy practices change and new ones are frequently acquired through the process of informal learning and sense-making

Source: Adapted from Barton & Hamilton (1998)

The first proposition in the framework underlies the social theory of literacy - *literacy is best understood as a set of social practices; these can be inferred from events which are mediated by written text*. Literacy is seen as a social practice that can be explored and understood in

context. This approach focuses on identifying key literacy events and exploring people's associated literacy practices. Such an approach moves away from a skills- or knowledge-centred approach to literacy and focuses on what people do with the texts they encounter and what these activities mean to them (Barton and Hamilton 1998). This approach to literacy involves examining literacy events in context and the second key proposition recognises that literacy is not the same in every context – *there are different literacies associated with different domains of life*. This creates a focus on the different domains of activity that can exist within a society (e.g. home, workplace, neighbourhood, school, sports club) and how different configurations of literacy practices can manifest within each domain. Exploring the literacy practices across these different domains and extent to which practices can transcend domain boundaries is a core focus of the social theory of literacy.

The framework's third proposition focuses on the institutional influence on literacy practices - *literacy practices are patterned by social institutions and power relationships, and some literacies are more dominant and influential than others*. The different domains in which literacy practices occur each have their own structure and which can support particular literacy practices over others (e.g. formal rules, documentation, processes to be followed). Certain socially powerful institutions, such as education and other government departments, tend to support dominant literacy practices (Barton and Hamilton 1998) which are embodiments of the power of these institutions. People may have little choice but to embrace these dominant literacies to access particular services. Thus the role of power and its influence on literacy practices is a key focus of this proposition. These dominant literacy practices can contrast to more informal practices (also known as vernacular literacy practices) in domains where institutional influence may be less prominent (e.g. in the home, socialising with friends) and such practices are thus less visible and less supported from an institutional perspective. Thus one important area of focus for this social theory of literacy is the relationship between dominant and vernacular literacies (Barton and Hamilton 1998).

Examining literacy in context means understanding the purpose and objective to which the literacy practices are directed. This leads to the framework's fourth proposition that; *literacy practices are purposeful and embedded in broader social goals and cultural practices*. Situating the literacy events and associated literacy practices in the broader context of the objective of the person and the cultural context in which it takes place is important to gain a comprehensive understanding of what is occurring and why. Thus in this social theory of literacy the focus moves from literacy as an individual act or skill to focus on it in groups and

how it is realised in social relationships and communities (Barton and Hamilton 1998). Literacy practices are also rooted in the past and to understand contemporary literacy practices it is necessary to explore and document the ways in which *literacy is historically situated* (Barton and Hamilton 1998). This historical approach can provide a more comprehensive understanding of the culture and traditions on which current literacy practices are based (Barton and Hamilton 1998). Closely related to this concept of literacy being historically situated is the final proposition in the framework; *literacy practices change and new ones are frequently acquired through the process of informal learning and sense-making*. This temporal focus on literacy provides an implied theory of learning (Barton and Hamilton 1998) that takes place in particular social contexts. Thus a significant importance is attached to the nature of informal and vernacular learning strategies. The focus in this proposition is to understand how people learn new literacy practices, the strategies that are used and the relationship between formal education and informal learning approaches.

2.4.1 Literacy as a Social Practice – Applied Literacies

While the majority of early empirical studies of this literacy as a social practice theory were in the context of general literacy studies (see, for example, Barton 1994; Barton and Hamilton 1998), in more recent years researchers have started to employ this theoretical approach to understand other applied areas of literacy including health literacy (Papen 2009; Samerski 2019), information literacy (Papen 2013), digital literacy (Bhatt 2012), and particularly in the context of this study, financial literacy (Bay et al. 2014). Papen (2009) focused on taking a social practice view of literacy to challenge dominant conceptions of health literacy. In a study of forty-five students' health-related reading and writing practices in the northwest of England, the study finds that health literacy is always 'situated' rather than a generic ability of the mind. There is also a temporal importance of examining health literacy over a longer time period over which patients are dealing with a particular symptom or disease, rather than just at a point in time. A further important finding from this study is the role of hierarchical social relationships and power imbalances between the patient and various medical practitioners (e.g. nurses, doctors, consultants) which can disempower the patient who is at the receiving end of health information. Consistent with Papen's (2009) findings, Samerski (2019) also questions the individualistic and rationalistic bias of conventional approaches to health literacy and suggests that health literacy is better viewed as a social practice that is situational and multidimensional. It is comprised of different sources and forms of knowledge and can be co-produced in social

relations. Papen (2013) undertook an exploratory study examining the information practices of pregnant women. Utilising the social practice theory of literacy, the author focuses on finding out what characterises pregnant women's information practices. Similar to Samerski (2019), the social networks of the women play a key role in evaluation of different sources of information. Furthermore, power relations, similar to those discussed in Papen (2009), are crucial to understanding information practice as claims to authoritative knowledge are put forward by doctors and nurses and require the women to balance these with other information they receive through different channels. Bhatt (2012) explores the digital literacy practices of adult learners as part of a college programme. The study adopts a social practice approach to digital literacy with a focus on the study of classroom digital literacy events. The key findings of the study are how particular digital literacy practices are influenced by institutional requirements as well as the importance of how digital literacy practices can be translated from one domain of the participant's life to another. In the context of this study, only one paper to date has explored financial literacy as a social practice (Bay et al. 2014). Challenging the dominant skills-based conceptualisation of financial literacy, the authors contrast financial literacy in two particular settings – efforts made to decrease financial illiteracy among Swedish adolescents and the demand for financial literacy in audit committees – and demonstrate that financial literacy is by no means a stable concept that is drawn upon in one particular setting for one particular purpose.

The above studies highlight the new perspective that literacy as a social practice can bring to diverse areas of applied literacy studies. Each study problematises the dominant skills-based view of the particular applied literacy and presents literacy as a social practice as a challenge to this by offering a different, more socially and culturally sensitive perspective to understand these complex phenomena. The studies focus on the concepts of “literacy events” and “literacy practices” (Heath 1983; Street 1984) which form a core tenet of the social theory of literacy. However, none of the studies have gone as far as providing a detailed application of Barton and Hamilton's (1998) literacy as a social practice framework to provide a comprehensive view of the different dimensions of these applied areas of literacy.

2.5 Financial Literacy as a Social Practice in Farming

This study provides the first detailed application of Barton and Hamilton's (1998) literacy as a social practice framework to financial literacy. In doing so, this study addresses Bay et al.'s (2014) call for financial literacy to be situated and studied in practice, while also providing an empirical structure of financial literacy in the farming enterprises in this study. The traditional view of accounting as a technical practice (for example, a farmer reading a set of farm accounts) misses the broader social and cultural dynamics at play when such a task is being undertaken. The social practice view of financial literacy emphasises a broader perspective to consider how such activities occur in a particular social and cultural context. This seeks to highlight the dynamic and fluid nature of this financial literacy based task and the importance of a social practice – as distinct from a technical practice – perspective. Following the core principles of Barton and Hamilton (1998), this study will focus on financial literacy events and associated financial literacy practices in farm settings to explore how financial literacy manifests itself through the six dimensions. By adopting such a theoretical approach, it allows us to explore heretofore neglected aspects of financial literacy including social, cultural, institutional, temporal, and historical influences. Table 2.4 outlines Barton and Hamilton's (1998) literacy as a social practice framework and how it can be applied to financial literacy in a farming context.

Exploring *financial literacy as a social practice* in farms creates a focus on the key financial literacy events that occur on the farm and the associated financial literacy practices of farmers. This practice based approach explores how farmers engage with financial texts, the format these financial texts take, where these financial literacy events take place, and who is involved. This is an important approach to understanding financial literacy on farms as the evidence from the key stakeholders focus group suggests that it is a complex phenomenon that goes well beyond mere financial skills but encompasses values, mind-sets, motivations and habits. The social practice view provides a useful lens to explore this in context.

You can be a farmer, or you can be a farmer-businessman and there's a different mindset there. Some people are just farmers because it's what they've always done, and others take a very business view to it.

Farm Advisor

I think that farmer developed good [financial]habits, and something motivated him to get him started and then just became a habit and I think that's what really the poor financial guy needs, something to motivate them and get them started in financial management and then develop good habits.

Farm Advisor

The farm itself *represents a particular domain of the farmer's life and of society* as distinct, for example, from the farmer's home or perhaps other off-farm work domains. Focusing on how financial literacy practices manifest themselves in the farm and comparing these to financial literacy practices in other domains can provide an insight into how certain practices may be unique to particular domains but also highlight the transferability of particular financial literacy practices across domains. Furthermore, farming involves a number of different types of literacies (e.g. agricultural literacy, animal husbandry literacy, IT literacy) which may compete with, or be complimentary to, financial literacy. Farms operate in the context of *significant institutional influence* in a variety of key farm finance decisions. Understanding the role this institutional influence has on the financial literacy practices on the farm is an important pillar of the social theory of financial literacy. Exploring how certain financial literacy practices are supported through this institutional influence in contrast to other vernacular financial literacy practices that may exist at a farm level that are less visible and supported is a key focus on this proposition. The context of the role of power between the farm and various institutional stakeholders (e.g. banks, advisors, accountants, government) also plays an important role in understanding this dynamic.

Farming is an inherent *social and cultural activity* (Vanclay 2004; Burton 2004) and any examination of financial literacy practices on a farm must be understood in this context. An appreciation of the farmers' motivations for farming, how they view their own identity as farmers as well as the importance social networks (e.g. farmer discussion groups) and cultural influences are crucial in understanding how financial literacy manifests itself on farms. With the majority of farms in Ireland being passed from one generation of the family to the next, any examination of financial literacy on farms must consider its *roots in the past*. Inheritance of financial literacy practices from previous generations, the cultural history of the farming sector, and the past experiences of the farmer themselves can significantly shape the current financial literacy practices on the farm. The focus on the past also leads to a temporal focus on financial

literacy and exploring *how financial literacy practices of farmers change over time*. Examining the nature of changes of financial literacy practices on farms either through formal education initiatives, such as farmer financial training programmes, or more informal avenues, such as social and experiential learning on the farmer's part, provide an insight into how farmer behaviour is influenced, which is a key issue currently for practitioners and policy makers. Such changes also take place in the context of broader societal, technological, cultural and regulatory changes and understanding the dynamic of how these changes at different levels of society influence financial literacy practices at a farm level is a key focus of this proposition.

Table 2.4 - Financial Literacy as a Social Practice in Farming Enterprises

Dimensions	Financial Literacy as Social Practice	Farm Financial Literacy Considerations
1. Social Practices	Financial literacy is best understood as a set of social practices; these can be inferred from events which are mediated by written texts	<ul style="list-style-type: none"> • How do farmers gather and use the financial information they have? • What do they focus on/ignore and why? • When do they use it and who is involved?
2. Concurrent Literacies	There are different literacies associated with different domains of life	<ul style="list-style-type: none"> • Does financial literacy compete with technical agricultural literacy (e.g. grass management, animal husbandry)? • Is IT literacy a requirement for financial practices on a farm? • Is financial literacy different in the family/off farm vs. on farm context?
3. Institutional Influence	Financial literacy practices are patterned by social institutions and power relationships, and some literacies are more dominant and influential than others	<ul style="list-style-type: none"> • Are certain financial practices on farms more prevalent due to Dept. of Agriculture, EU schemes, tax authorities, farm media? • What influence do education/advisory services have on financial practices?
4. Socio-cultural Context	Financial literacy practices are purposeful and embedded in broader social goals and cultural practices	<ul style="list-style-type: none"> • How does the farmer's motivation influence financial practices? • What impact does the economic dependence of the household on the farm have on farm financial practices? • What cultural influences affect the financial practices of farmers?
5. Historical Context	Financial literacy is historically situated	<ul style="list-style-type: none"> • What role do prior generations/experiences play in financial practices? • Are financial practices predominantly inherited or learned externally to the farm?
6. Temporal Context	Financial literacy practices change and new ones are frequently acquired	<ul style="list-style-type: none"> • How do the financial practices of farmers change over time and what influences this change? • How and when do farmers adapt their financial practices?

Source: Adapted from Barton & Hamilton (1998)

2.6 Chapter Summary

Although diverse areas of literature, the evolution of both the literacy and farm management literature towards more socially and culturally sensitive epistemological principles has clear parallels. Financial literacy as a discipline is at an important inflection point in its development and the infusion of alternative theoretical frameworks, such as those that occurred in the 1980's for literacy studies through the area known as 'New Literacy Studies', could help to further develop our understanding of financial literacy and address some of the anomalies in the literature as outlined in Lusardi and Mitchell (2014). At the time, this represented a fundamental epistemological shift in the conceptualisation and study of literacy. The focus on the social, cultural, historical, and institutional practices associated with literacy, as opposed to solely the cognitive aspects (Gee 2015) brought a new insight and approach to the debated issue of literacy's role and importance in society. Farming enterprises provide a useful and novel context in which to explore financial literacy as a social practice. The importance of exploring farming as a social and cultural practice to understand farmers' practices has already been well established (for example, see Burton 2004; Vanclay 2004) and provides a good fit with the literacy as a social practice framework. Furthermore, existing literature on farm financial management practices highlights a gap in understanding how and why farmers adopt particular financial management practices. These issues in both the financial literacy and farm financial management literature provide the key motivation for this study's research question.

This chapter provides a review of the different bodies of literature pertinent to this thesis which include financial literacy (section 2.2), farm financial management (section 2.3), and literacy as a social practice (Section 2.4). Section 2.5 then outlines how these bodies of literature inform the theoretical framework for this study which explores financial literacy as a social practice in farming enterprises. Finally, the chapter concludes with this summary. The next chapter demonstrates how this framework was implemented in the study.

Chapter 3 Research Methodology

3.1 Introduction

The purpose of this chapter is to provide an overview of the philosophical foundations and research methodology undertaken for this study. This will include providing a rationale for the adoption of a research methodology to align with the study's research question along with the demonstration of how the research method chosen, multiple longitudinal case studies, has been rigorously applied. The chapter is organised as follows; Firstly, section 3.2 provides an overview of the purpose of the study. Section 3.3 then presents the philosophical stance adopted in this study which underpins the choice of research strategy discussed in section 3.4. Section 3.5 discusses the research method undertaken, while section 3.6 expands on the research techniques used. Section 3.7 presents the process of data analysis. Next, the criteria for evaluating qualitative research are considered in section 3.8 followed by ethical considerations addressed in section 3.9. Lastly, section 3.10 addresses the methodological limitations of the study and the chapter concludes with a summary in section 3.11.

3.2 Purpose of Study

As discussed in Chapter 1, the purpose of the study is to examine how financial literacy manifests itself in farming enterprises. It is exploratory based research viewing financial literacy as a social practice that is situated within a particular socio-cultural setting. Exploratory research aims at understanding how a phenomenon takes place and it is favoured when significant descriptive information exists regarding a research area, but there is uncertainty about the phenomenon of interest (Yin 2004). As noted by Bay et al. (2014), financial literacy is rooted in a positive tradition and is underpinned by the following three main assumptions; (1) financial literacy is a fixed and stable concept; (2) financial skills underlying literacy predict how the individual will make financial decisions; and (3) financial skills can be taught and once acquired, a financially incapable person can become a capable investor. This study seeks to take an alternative perspective of financial literacy derived from the researcher's own experience as a financial advisor, mentor and educator working in the farming community for the past 15 years, and drawing on the literacy as a social practice paradigm by Street (1984) and Barton and Hamilton (1998). Placing social and cultural factors at the core of the conceptualisation of financial literacy will allow to explore the way in which the phenomenon changes in different social settings (Bay et al. 2014).

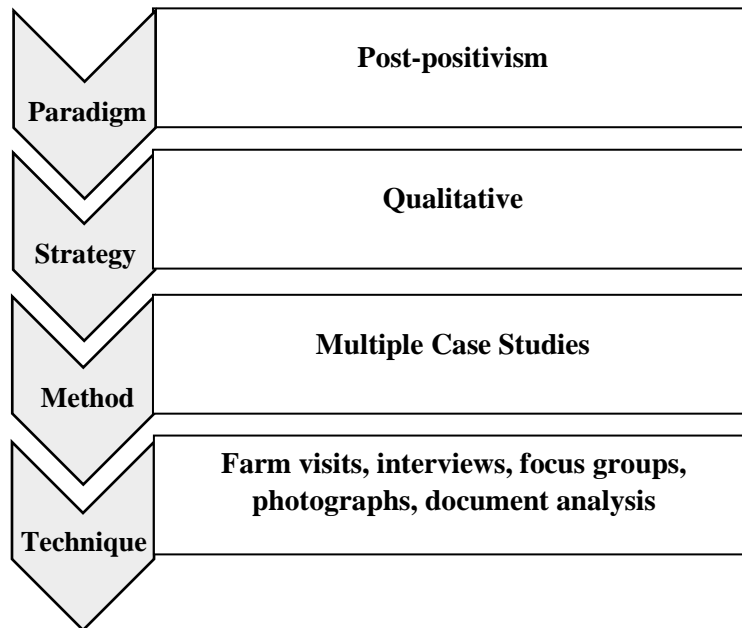
This study also contributes to the farm management literature. The increasing financial pressures at a farm level have focused attention on gaining a better understanding of the financial practices undertaken by farmers. Significant research has already examined various technology and practice adoption issues on farms in areas such as grassland management (Kelly et al. 2016), animal health (McAloon et al. 2017), and animal breeding (Howley et al. 2011) to understand how and why farmers decide whether to change their farm management practices. However, such insight is notably absent in terms of farm financial practices. While some research in the farm management literature has looked at financial management at a farm level, there continues to be little examination of *what farmers actually do and why* in terms of financial practices. This focus on examining financial literacy as a social practice provides scope to explore in detail how the phenomenon manifests itself at farm level.

These gaps in the relevant literature provided the following overarching research question for exploratory investigation;

How does financial literacy manifest itself in farming enterprises?

As discussed in Chapter 2, this study will utilise a theoretical framework from the literacy literature (literacy as a social practice from Barton and Hamilton (1998)) and apply it to the context of financial literacy in farming enterprises (See Table 2.4). This is a novel application of such a framework to a farming context and, to the best of the researcher's knowledge, only one other paper has discussed financial literacy in this context (Bay et al. 2014) but it has not been applied using the full six propositions. These propositions in the framework provide the opportunity to explore heretofore neglected issues in the context of the existing farm financial management literature including social, cultural, and historical influences on farmers' financial practices. This research question informs the research methodology employed in this study. Figure 3.1 below provides an overview of the study's research design and the following sections will provide a detailed discussion of each element.

Figure 3.1: Research Design Overview



Source: Adapted from Strang (2015, p.4)

3.3 Research Paradigm

Research paradigm refers to how the researcher thinks about knowledge claims, as being on a continuum based on explicit evidence structured from theories to the other extreme of authentic qualitative tacit meanings expressed by participants (Strang 2015). This choice of research ideology is important in that it forces the researcher to articulate their philosophical view or belief system and this choice is driven by the researcher's sociocultural philosophy (Strang 2015). Commonly, paradigms are presented in terms of ontology (i.e., nature of reality), epistemology (i.e., how we know what we know), and methodology (i.e., the process of research) (Denzin and Lincoln 2011).

Ontology is concerned with the nature of reality and the study of being (Crotty 1998). It raises basic questions about whether reality is objective and independent of human construction or subjective and perceived through human construction (Guba and Lincoln 1994; Denzin and Lincoln 2005). Researchers who perceive reality as objective would be inclined towards a positivist stance. In contrast, researchers who believe reality is subjective and only viewed within the parameters of human understanding would be inclined towards a constructivist stance. Epistemology is concerned with the nature of knowledge and the relationship between

the researcher and the phenomena under study (Guba and Lincoln 1994; Denzin and Lincoln 2005). Epistemology is concerned with providing a philosophical grounding for deciding what kinds of knowledge are possible and how we ensure it is adequate and legitimate (Maynard 1994). Ontology applies to beliefs of the world, whereas, epistemology applies to how knowledge about the world can be created (Burrell & Morgan 1979). Finally, methodology focuses on the different techniques to conduct research (Guba and Lincoln 1994). The methodological stance is concerned not only with the methods used to collect and analyse data but also with issues such as voice, ethics, values and the rigor of a study (Lincoln and Guba 2000).

The chosen research paradigm for this study is post-positivism. Post-positivism takes account of the fact that it is difficult to have one “factual truth” as a theory and because it is almost impossible to know what exists in human brain schemata (Strang 2015). From an ontological perspective, reality is assumed to exist but to be only imperfectly apprehensible because of basically flawed human intellectual mechanisms (Guba & Lincoln 1994). Such an ontological perspective is labelled as critical realism (Cook & Campbell 1979) because claims about reality must be subjected to the widest possible critical examination to facilitate apprehending reality as closely as possible (Guba & Lincoln 1994). From an epistemological perspective, post-positivism assumes we can only approximate nature. Knowledge cannot be divorced from ontology (being) and personal experience. Post-positivist values in research emphasise multiplicity and complexity. Thus from a methodological perspective, post-positivism emphasises critical multiplism (Guba & Lincoln 1990), using multiple measures to triangulate and approximate the truth as close as possible.

Post-positivism argues that context is needed and the paradigm seeks to understand social phenomenon in natural settings (Patton 2002). This is important given the research question of this study which involves the exploration of financial literacy in farming enterprises which is a complex phenomenon and involves a rich context. The current dominance of positivist based approaches to the literature in both farm financial management and financial literacy have contributed to an over simplification of the understanding of this complex phenomenon. The reductionism of human experience and context can provide limited insight into the actual financial practices farmers engage in and the reasons for those practices. The influence of the disciplinary traditions of economics and accounting on the financial literacy and farm management literature respectively have dominated the research agenda to date. This scientific approach which positivism espouses is rightly thought to be inadequate when it comes to

learning about how people live, how they view the world, how they cope with it, how they change it, and so on (Ryan 2006). The literacy as a social practice theoretical framework, originating from sociological tradition and consistent with the critical realist perspective, provides a mechanism through which to explore these under researched elements of financial literacy in context. Such an approach can provide much more insight for stakeholders (e.g. policy makers, educators, advisors) in terms of understanding farmer behaviour, targeting effective financial education initiatives at farmers, creating effective policy to support family farms, and ultimately improving the financial outcomes for the farmers and their farms. Furthermore, post-positivism is well suited to the use of case study research as case studies can be viewed as “quasi-experimental” where the researcher cannot manipulate behaviour, but the logic of experimental design can be applied (Yin 2003). This study uses multiple longitudinal case studies to explore how financial literacy manifests itself at a farm level. In summary, the paradigm adopted in this research is post-positivism and the ontological approach is critical realism. The research strategy for guiding this paradigm is presented next.

3.4 Research Strategy: Qualitative

This study adopts a qualitative research strategy to examine how financial literacy manifests itself in farming enterprises. Qualitative data have three fundamental characteristics that offer potential advantages over quantitative data; qualitative data are (i) open ended; (ii) concrete and vivid; and (iii) rich and nuanced (Graebner, Martin and Roundy 2012). These characteristics allow a qualitative research approach to capture details and complex mechanisms that are easily overlooked in quantitative data.

A qualitative research strategy for exploring the financial literacy in farming enterprises is appealing for several reasons. Firstly, qualitative research is most suited to understanding complex processes involving causal mechanisms, often embedded in nuanced social contexts (Maxwell 1998; Mason 2002; Graebner, Martin and Roundy 2012). Qualitative research approaches allow the researcher to acknowledge the complexity and context of phenomena which is important when the researcher aims to examine context-rich phenomena and develop a holistic perspective (Patton 2002; Shepherd and Sutcliffe 2011; Weber 2004). Qualitative researchers tend to be more committed to the specifics of particular cases and a more emic approach (Denzin and Lincoln 2005). It is a research methodology that is seeking contextual understanding of phenomena rather than a scientific non-contextualised interpretation (Lincoln

2009). Therefore, a qualitative research strategy is particularly relevant to this study as it explores the financial literacy in a complex social context (i.e. family farming enterprises) (Yin 2003). According to Graebner, Martin and Roundy (2012, p.279), the main advantage of qualitative data is *“its richness, which enables researchers to unpack multifaceted, temporally unfolding situations and causal mechanisms in a detailed and sophisticated manner”*.

A qualitative strategy is also useful when the phenomena of interest fundamentally involve words and language (Graebner, Martin and Roundy 2012). The nature of literacy as a social practice research and the application to a financial literacy context is about exploring the experiences of people with financial texts and financial language. Furthermore, qualitative data are useful for generating theory when the phenomenon being studied is new or underdeveloped (Eisenhardt 1989; Graebner, Martin and Roundy 2012). As outlined in Chapter 2, there has only been one previous study looking at the concept of financial literacy as a social practice (Bay et al. 2014) and none in the context of farming enterprises.

This research employs a combination of both deductive and inductive methods. Deduction typically begins with existing theoretical frameworks, forms hypotheses based on these, and aims to test these in order to verify their validity in different samples and contexts (Robson 2011; Gray 2017). An inductive approach, however, usually begins with data and attempts to propose new theories for previously unexplored research areas (Locke 2001). However, induction and deduction are not completely exclusive. The iterative process between existing theories and data collection can help advance new findings about the phenomenon under question and help to build and/or expand existing theories (Staat 1993; Thomas 2010; Shepherd and Sutcliffe 2011; Mantere and Ketokivi 2013). Abductive research helps to identify unobserved patterns and generate explanations within existing theories. The purpose of this study was not to develop a completely new theory nor deduce from existing theoretical theories, thus, abduction was considered the most appropriate approach. As Whetten (1989) points out in his seminal article on theoretical contribution, the focus is on qualitative improvement around the boundaries of extant constructs and relationships rather than quantitative reproduction.

Initially, a study of the relevant literature and existing theoretical constructs was undertaken to gain an understanding of the research topic. As outlined in Chapter 2, some existing frameworks are available to inform the exploration of financial literacy in farming enterprises, however these alone may not be sufficient to completely understand this previously unexplored

complex phenomenon. This approach of identifying an anomaly or tension in the literature is a key starting point when building theory (Shepherd and Suddaby 2017). By problematizing (Locke and Gloden-Biddle 1997) the existing financial literacy literature, it “highlights the need for rethinking existing theory and perhaps the need to head in a new direction” (Shepherd and Suddaby 2017, p. 63). In addition to the existing literature, and particularly in the context of the researcher’s own experience as a farmer and the anomalies with respect to farm financial literacy identified in section 1.2, knowledge discovery to stimulate theorizing can also come from “observation by the senses” (Locke 2007, p.888).

The area of financial literacy in farming enterprises transcends a number of disciplines including literacy studies, financial literacy, and farm financial management. This research process began with a review of these bodies of literature to identify the theoretical constructs available that could be applicable to the research question. By firstly using a deductive approach to identify key aspects and constructs that could be useful when examining the research topic, it provided a guide when deciding on the cases and collecting data. However, given the dearth of specific qualitative research on financial literacy and in a farming or MSE owner/manager context, there is likely to be a complex phenomenon that prior constructs and literature from the various domains will not capture. Therefore, an inductive approach is used to study the constructs and identify patterns among the cases.

In summary, this research adopts a qualitative research approach, specifically an abductive research strategy. This research strategy provides the scope to provide new insights in the area of financial literacy and to extend previous theories in related bodies of literature such as literacy studies, financial literacy and farm financial management. The next section focuses on the case study method and its application to this study.

3.5 Research Method: Case Study

A case study method is suitable for this study given the nature of the research question posed. Case study is the preferred method to understand complex phenomena in dynamic settings (Eisenhardt 1989; Stake 1995). Yin (2009) recommends the case study method when posing “how” or “why” questions, and when the focus of study is on events in a real-life context. Yin (2009) also argues that case study research can be used to analyse why and how contemporary, real-life phenomena occur in cases where researchers have minimal control. This study explores a contemporary issue within a real-life situation (family based farming enterprises) and uses multiple sources of evidence to understand the phenomenon of study. The longitudinal

case study methodology, which involves the real time collection and analysis of case evidence over a twelve-month period, also allows for a better understanding of the temporal aspects of the phenomenon in contrast to the static focus of previous quantitative studies. Furthermore, in the case of farm management literature, case studies have emerged as an increasingly popular methodological approach to capture the complexity of farmer behaviour (Macken-Walsh et al. 2012; McDonald et al. 2014; McDonald & Macken-Walsh 2016).

3.5.1 Multiple Case Study Approach

This study adopts an exploratory multiple-case study strategy, which was deemed most appropriate as it seeks to understand how a phenomenon takes place. Multiple cases enable an in-depth analysis of each case (Yin 2003) and evidence to be built through the comparison of cases with similar features (Yin 1994). This methodology allows clarification on whether an emerging outcome is unique to a single case study or it is regularly replicated in several cases (Eisenhardt 1991). Case studies can be regarded as a powerful means in order to create theory because they permit replication and extension among individual cases. The rich background context of cases is provided by stories, but the deeper theoretical insights of cases studies are gain from methodological rigour and multiple case comparative logic (Eisenhardt 1989,1991; Eisenhardt and Garebner 2007; Strang 2015).

Due to the limited number of cases, the selection of the farming enterprise is one of the most important elements of the case study process. Yin (2009) maintained that the sample size is irrelevant in the case study method as the appropriate sample size depends on the level of certainty expected from the cases, while Eisenhardt (1989) maintained that a number of cases between 4 and 10 “usually works well. Following this, the study focuses on five farm case studies. The study is intentionally focused on this small number of farms in order to allow a detailed and contextually rich analysis.

“Case studies, like experiments, are generalizable to theoretical propositions and not to populations or universes. In this sense, the case study, like the experiment, does not represent a “sample” and the investigator’s goal is to expand and generalise theories (analytical generalisation) and not to enumerate frequencies (statistical generalisation)”

Yin (2009 p. 15)

3.5.2 Case Selection

The case studies were selected based on a theoretical sampling logic (Yin, 2003). Theoretical sampling simply means that cases are selected because they are particularly suitable for illuminating and extending relationships and logic among constructs. (Eisenhardt & Grebenar 2007). Each case must be carefully selected so that it either (a) predicts similar results (literal replication) or (b) predicts contrasting results but for anticipatable reasons (theoretical replication) (Yin 2009). The focus of the research design was to have a number of case studies with a diversity across household structure, household dependence on farm income, and the existence of farm debt. These criteria were influenced by the theoretical framework used as part of the study, discussions with farm financial management experts in Teagasc, a stakeholder focus group of experts in the field of farm finance and a pilot case study on the researcher's home farm. The stakeholder focus group was held prior to commencing this study to understand the key issues from a variety of practitioner perspectives including farm advisors, farm finance specialists, banks, and government officials. More details about the participants in this focus group as well as sample evidence of the key issues identified are included in in Appendix A-9. Furthermore, the researcher, as a part-time farmer on his own family farm, also undertook a twelve-month pilot case study on his own family farm to explore the usefulness of the literacy as a social practice framework to understand how financial literacy manifests itself. For three of the cases chosen (F2, F3, and F4¹³), there was limited financial pressure on the farm due to the presence of off-farm income (from either the farmer or the spouse), few or no dependents in the household, and limited debt on the farm. These case studies were chosen for literal replication purposes (Yin 2004) to provide a focus on the social and cultural aspects of how financial literacy manifests itself in farms given the absence of a primary financial driver to focus on the farm's financial practices. The other two the cases chosen (F1 and F5), provide a contrasting situation as there are young, growing households that are dependent on the farm for household income and the farms have substantial debt to service. Consequently, there is significant financial pressure on both farms and a particular focus on the financial practices of the farm for this purpose. Such a contrast between the cases selected should provide scope for theoretical replication (Yin 2004).

In addition to theoretical considerations around case selection, practical issues also had to be considered. Concerns around privacy and the close nature of the farm finances to the personal

¹³ The names of each farm case study have been changed to protect the anonymity of the participants in the study. Any references to other individuals, such as family members, advisors etc., have also been changed.

and household finances in each farm were an important consideration at the outset of the research design and approach of this project. The involvement of Teagasc was an important step to provide a common link between the researcher and the farmers. Teagasc's reputation for farm level research coupled with the close relationship of the Teagasc advisor to each case study farm provided access that would otherwise have been difficult to obtain given the sensitivity of the research subject. Case farms were selected in collaboration with Teagasc financial experts and farm advisors who were sent information about the desired characteristics of case farms based on the theoretical sampling approach. This information is included in Appendix A-2.

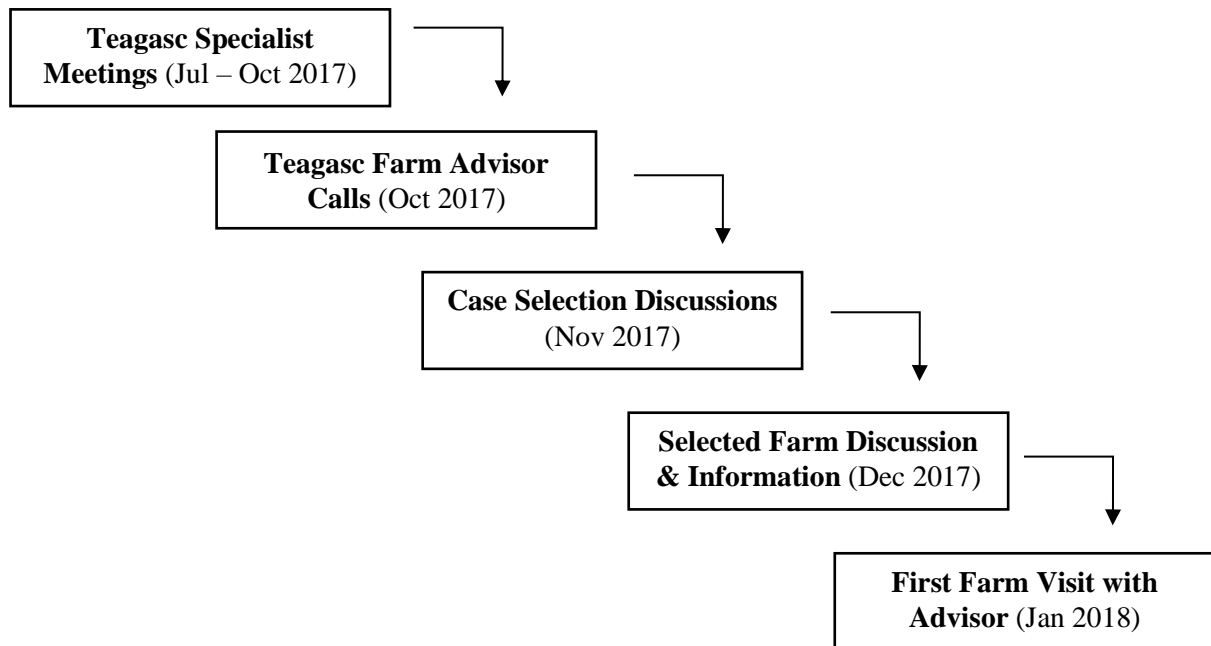
Finally, to minimise external variation beyond the phenomenon of interest (Eisenhardt 1989), the cases chosen are within the same farming system – cattle rearing – as the inclusion of other systems (e.g. dairy, sheep, tillage) would significantly alter the financial context of the case farms due to the substantial differences across farming systems (see section 1.3 for a more detailed discussion on this). Cattle rearing is more commonly known as suckler farming (as the calf suckles the cow from birth) within the farming industry and such cows that calf on the farm are known as suckler cows. For consistency throughout this thesis and, given the scale of these businesses, we will refer to the case farms as micro and small cattle rearing enterprises. There are approximately 30,000 farms in Ireland with a cattle rearing enterprise with approximately 80% of suckler cows calving in spring and the remaining 20% in autumn (Teagasc 2016). These farming systems are typically split into three whereby the farmer then either (i) sells the calf when it is weaned from the cow at around 8 months of age (37% of enterprises); (ii) sells the animal as a store to a dedicated beef finisher (37%); or (iii) finishes the animal on the farm which is then ready for slaughter (26%) (Teagasc 2016). The average age of the animal at finishing would be approximately 24 months but this can vary between 16-30 months depending on the sex, breed, and system on the farm. Cattle rearing (or suckler) farms provide an interesting financial context in which to explore financial literacy for this study. This system has the lowest average family farm income, the highest reliance on direct payment supports, the joint highest portion of farmers with off-farm income, and the lowest portion of farms that are independently economically viable (see Table 1.3). Despite this difficult economic situation, these farms, as one of the most traditional farming systems in Ireland, contribute to wider societal sustainability, particularly as they are often located in marginal or economically disadvantaged areas, where their presence is vital to the social fabric and cultural capital (Hennessy et al. 2018). There is also considerable regional variation in the

significance of the suckler cow herd with the West, Border and Midland regions having a very strong dependence on the suckler cow herd. Of the total suckler herd, 22.7% is in the West of Ireland; 16.6% is in the Border region; and 16.3% is in the Mid-West (Power 2020). Furthermore, these farms also play an important role in the provision of public goods including the protection of the environment, preservation of the rural landscape and providing unique features such as stonewalls and hedgerows all of which positively contribute to the image of rural Ireland and rural tourism (Hennessy et al. 2018). Thus cattle rearing farms provide a unique context in which to explore financial literacy as a social practice as the difficult financial situation of the farming system is balanced with the role of tradition and the influence of social, cultural, and environmental factors.

The selection of the five exploratory case studies of financial literacy in farms followed a number of steps as outlined in Figure 3.2 below;

1. Initial meetings with Teagasc financial management specialists to discuss theoretical sampling concepts, suitable farm sectors to focus on, and important farm characteristics to include in case criteria. Identification of relevant Teagasc farm advisors was also discussed to progress to the next step. **[July-October 2017]**
2. Initial phone calls with Teagasc farm advisors to explain the purpose of the study and the desired farm characteristics. Each advisor was sent an information sheet to assist them in reviewing their client portfolio for suitable farms. This information is included in Appendix A-2. **[October 2017]**
3. Follow up phone call with each Teagasc advisor to discuss suggested farm case study characteristics and choosing of suitable farm case studies. **[November 2017]**
4. Teagasc advisor contacts farmers directly initially to understand their interest in participating in the research project. A farmer information sheet including an overview of the research study and the level of commitment involved in participating was provided for each prospective farmer. This information is included in Appendix A-1. **[December 2017]**
5. First farm visit was arranged in liaison with the Teagasc farm advisor who also attended. At this initial meeting individual ethics consent forms were provided to the farmers and the Teagasc advisors to sign as part of participation in the study. **[January 2018]**

Figure 3.2: Case Selection Process



The final sample for the study comprised of five in-depth cases which involved 15 farm visits and associated interviews, lasting a total of 23.8 hours (refer to Table 3.3), over the period of 12 months. The final number of cases were decided after the first round of interviews had taken place and the initial analysis of the data was undertaken as it was felt that data saturation had been reached (Eisenhardt 1989). This occurs when the analysis of the cases does not contribute any new insights into the phenomenon being studied (Eisenhardt 1989). The addition of new cases and interviews had limited effect on the overall data analysis and resulted in limited, if any, new themes or findings emerging that were not already established from the previous case studies. A summary of the five case farms is provided below in Table 3.1.

Table 3.1: Case Studies Overview

	F1	F2	F3	F4	F5
Farmer	Full time farmer (mid 40s) Previously trained as electrician	Full time farmer (55)	Part time Farmer (55) Part-time off-farm job	Full time farmer (67) Farming since he was 11 – 1963	Full time Farmer (mid 40s) alongside her mother (70) in partnership
Farm	100 acres with 80 cows	300 acres - mixture of beef enterprise and suckler cows	85 acres with 25 cows and 45 acres in tillage	108 acres with 50 cows	150 acres with 50 cows
Household	Wife is a full time teacher Two young children – national school	Wife is teacher but house does rely on farm Two teenage daughters – actively involved in farm	Bachelor, living with elderly mother who needs full time car	Wife works PT as nurse Grown up family with two building on farm nearby	Lives on farm with husband and two young sons Mother lives alone in farm house
Financial Position	Significant farm debt – half of farm income currently spent on servicing it Financial pressure to service loans, support household, finish house Looking at alternative enterprises that are financially worthwhile	Little debt on farm Currently looking at large solar farm project for financial security	Little debt on farm No financial pressure on farm to support household Strong views that farm must “stand on its own feet”	Grown up family, receiving state pension Limited financial pressure on farm or household Bought land recently that led to some farm debt currently	Significant legacy debt Financial survival is current focus Big cashflow focus each month Currently looking at selling a development site to sort farm debt issues
Succession	Too early – young family	Two teenage girls with keen interest and eager to involve them in the farm business	No clear succession plan	No clear succession plan	Clear succession plan

3.5.3 Unit of Analysis

The choice and definition of level of analysis is not only important in relation to the design of empirical studies, it is also essential for the appropriateness of the utilization of different theories and the suitability of different conceptualisations of phenomenon (Davidsson and Wiklund 2001). As noted in Patton (2002, p.229) *“The key issue in selecting and making decisions about appropriate unit of analysis is to decide what it is you want to be able to say something about at the end of the study”*. The unit of analysis can vary on a continuum from granular level (e.g. individual, team, business) to more aggregate (e.g. community, region, country). The main unit of analysis of this study is the farming enterprise. Given the case study selection criteria, specifically that only family farms were considered (i.e. no corporate farms), it is important to note that the farming enterprise is comprised of the family (household), the farm business and the individual farmer. The unit of analysis in this study considers all three of these as a single unit in exploring the phenomenon of financial literacy. This approach assists the researcher to obtain a holistic perspective about the subunits, which is one of the strengths of case study methodology (Patton 1990). It is important to avoid confusion between the unit of analysis and the units of data collection (Yin 2009) and the level at which the principal research questions are posed and analyses carried out, rather than the level at which data are collected, determines the level of analysis (Davidsson and Wiklund 2001). It is common in case studies to have the individual as the data collection source and the collective (organisation or community) as the unit of analysis. As this study attempts to explore how financial literacy manifests itself in farming enterprises, the most appropriate unit of analysis is the farming enterprise. However, family and non-family members (e.g. advisors) involved in the farm were the most appropriate units of data collection. The nature of literacy as a social practice emphasises the focus on the broader social and cultural influences on financial literacy practices. Consistent with this perspective, it is appropriate to understand the role of the farmers’ broader network of social influence (e.g. other family members, farm advisors) in exploring how financial literacy manifests itself.

3.6 Research Technique: Triangulation

This section provides an overview of the research techniques used to carry out the study and the steps through which the data was collected and analysed. This research study employed a triangulation strategy to help better understand the research question. Triangulation refers to

the use of several methods or several types of data in qualitative research to develop a comprehensive understanding of the research topic (Eisenhardt and Graebner 2007; Ghauri, 2004; Seale 1999; Patton 1990). This research utilised a combination of farm advisor discussions, multiple case interviews, archival records (e.g., farm financial records, farm financial statements), informal farmer discussions over the phone and during farm visits, and observations gathered over three separate farm visits over the space of a twelve-month period. Photographic evidence from the farm visits including examples of farm financial records, structure of farm offices, and samples of the farmers' financial analysis were also collected on each farm visit. Table 3.2 provides an overview of the key steps in the research process. Although the table outlines a linear process for the research technique, in many cases it would have been an iterative process as some steps would have been undertaken concurrently with each of the three visits to the case farms involve preparations, interviews, follow-up, and data analysis in their own right

Table 3.2: Research Process

Step 1	Expert Focus Group	Focus group with farm financial management experts to discuss study and research design
Step 2	Case Identification	Identified suitable cases with Teagasc farm advisors. Letter sent requesting participation in the research.
Step 3	Initial Data Collection	Preparatory discussions with relevant farm advisors about each case farm
Step 4	Farm Visits/Interviews	Three visits and interviews over a twelve month period to the case farms
Step 5	Further Secondary Data Collection	Follow up phone calls with farmers in periods between visits to discuss concepts from interviews and arrange next interview
Step 6	Data Analysis: Coding	Data sorted into relevant structure for analysis
Step 7	Data Analysis: Within-Case Analysis	Detailed description of each case and interpretation of data
Step 8	Data Analysis: Cross-Case Analysis	Thematic analysis across the five cases
Step 9	Synthesis	A synthesis of the key findings, contributions to the literature, and implications for practice and policy

3.6.1 Interviews

In this study, interviews were the main data collection technique used. Once the relevant cases were identified, a personal letter was sent to each farmer through their Teagasc advisor requesting participation in the research project and outlining the commitment involved. A sample letter sent to each of the participants can be found in Appendix A-1. Once a farmer agreed to participate, an initial telephone discussion was had with their farm advisor to familiarise the researcher in more detail with the farm background and situation.

A detailed research protocol was developed for the farm visits to ensure that all the key topics were covered during the interviews and to provide a structure to the interviews to ensure consistency and comparability across all farms. This is included in Appendix A-3. This protocol provided an outline of the questions to be discussed in each interview as well as providing scope to follow up on issues raised in previous interviews and the subsequent data analysis undertaken. Given the temporal focus of the study and the events based nature of the literacy as a social practice framework, significant consideration was also given to the time of the year the interviews were being held and the main financial literacy event(s) occurring on the farm at that time. Farm visits and interviews were undertaken in January 2018, July/August 2018, and January 2019. This visit timeline provided an insight into the quieter winter period on the farms when most animals were housed and the farmers' focus in the long winter nights turns towards the administration side of the farm while also contrasting this with the busy summer period on the farm and the lead in to the annual tax deadline in the autumn. A summary of the key topics covered in each visit is outlined below along with a sample of the questions asked during the interviews. More detail about each visit are included in Appendix A-3.

Visit 1 – January 2018

This visit focused on the first dimension of theoretical framework – social practice – while also allowing the interviewer build a rapport with the farmer and to obtain a foundation of information to then build on for subsequent farm visits. Questions were targeted at obtaining a deeper understanding of the background of the farm, the farmer and his/her family, the farmer's motivations for farming, along with the financial literacy practices currently being undertaken on the farm including when these occur and who is involved. Photographs were also taken as evidence of the environment in which financial literacy events take place and the type of financial texts being used on the farm.

A sample of the questions asked during this visit include;

- How did you get involved in farming initially and how has that developed to where you are today?
- Can you tell me a bit about your approach to book work and record keeping on the farm?
- Can you give me an overview of how you keep track of the financial records of the farm?
- Who would be involved in the financial practices on the farm in terms of record keeping, financial decisions, and financial advice?

Visit 2 – July/August 2018

The second round of interviews focused on a narrower set of issues to allow a deeper insight into particular dimensions of the financial literacy as a social practice framework including the farmer's social network, the role of institutional influence, the influence of the past on farm financial practices, as well as the different literacies involved in farming. This interview covered dimensions two (concurrent literacies), three (institutional influence), and four (socio-cultural context) as well as following up on any outstanding issues from the visit farm visit and subsequent transcript analysis.

A sample of the questions asked during this visit include;

- Can you tell me a bit about the different advisors you would use for your farm?
- In terms of financial decisions and advice on the farm, who would be your first port of call for advice?
- What would you consider the most important job(s) on the farm in terms of improving farm performance?
- If you could improve on one area of your farming skill set, what would it be?
- Can you tell me a small bit about how you use technology on the farm?

Visit 3 – January 2019

The final set of interviews completed the focus on the remaining dimensions of the financial literacy as a social practice framework while also taking a look towards the future of the farm. These topics include the role of generational control, financial education and training, and the future of farming. This interview covered dimensions five (historical context) and six (temporal

context) as well as following up on any outstanding issues from the visit second visit and subsequent transcript analysis.

A sample of the questions asked during this visit include;

- Can you tell me a bit about when you took over [or became involved in] running the farm?
- How did you develop the current financial practices on the farm?
- How confident would you be in terms of the financial management of the farm? Are there any aspects that you would like to improve on?
- In terms of the future of your farm here – what would you like to see?
- How do you see the future of suckler farming?

The initial farm visit and interview was arranged in liaison with the Teagasc advisor who also attended in person with the researcher. Financial management is a sensitive topic in many businesses (Ang 1991) and this is particularly so in farms (Hilkens et al. 2018) given the proximity of the topic to personal and household finances. Given the significant level of trust and disclosure required from a case study of this nature when exploring financial literacy, Teagasc advisors operated as an intermediary point of contact to initiate discussions about the research project, determine the level of interest of the farmer, and to arrange the initial farm visit. This approach was important to build trust with the farmers as Teagasc is a well-established institution with research experience in the farming sector and each farmer's own Teagasc advisor would be trusted by the farmer at a personal level and the farmer would be comfortable in discussing the financial aspects of the farm with them.

Over the course of a twelve-month period (January 2018 - January 2019), 15 farm visits and exploratory semi-structured in-depth interviews were conducted across the five farm case studies. The initial farm visit was undertaken accompanied by the respective Teagasc farm advisor while the subsequent farm visits and interviews were undertaken unaccompanied by the researcher. A summary of the farm visits and interviews are provided in Table 3.3 below. Each interview ranged from between 25 and 80 minutes and was recorded and transcribed for data analysis purposes. The interviews were held between January 2018 and January 2019. The locations of the interviews varied depending on the interviewee's circumstances but typically occurred in the farm house kitchen or in the farm yard during busy periods on the farm. As can be noted from Table 3.3, the duration of the farm visit itself is often significantly longer than the recorded interview duration. This was an important aspect of the overall research approach as it was important to build a rapport with each farmer, often through a farm walk to see the

farm, farm yard and the livestock as well as informal discussions before the commencement of any recorded interview. This provided the opportunity to engage with the farmer on a more informal level and understand the farm in more detail. Overall, 11.4 hours of interviews were recorded resulting in 314 pages of interview scripts, while the 15 farm visits in total lasted 23.8 hours. After each interview was complete, field notes were taken by the researcher including preliminary thoughts and interpretations which were initially recorded using a dictaphone and then transcribed into research notes to assist with data analysis.

Table 3.3: Description of Farm Visits and Interviews

Visit	Time	Details	F1	F2	F3	F5	F4	Total
1	January 2018	Initial farm visit accompanied with Teagasc farm advisor Location: Farmyard and sheds Farm tour, shed tour Context: All animals housed, focus on paper work and administration	Visit Duration: 2 hours Recorded interview: 40 mins Pages of transcribed text: 10	2 hours 1 hour 30	2 hours 80 mins 23	2 hours 1 hour 37	90 mins 35 mins 19	9.5 hours 4.6 hours 119 pages
2	August 2018	Unaccompanied visit Location: Farmyard and sheds Context: Busy outdoor work season, drought period Summer 2018	Visit Duration: 1.5 hours Recorded interview: 30 mins Pages of transcribed text: 25	2 hours 70 mins 40	1.5 hours 1 hour 18	1 hour 35 mins 24	1 hour 35 mins 16	7 hours 3.8 hours 123 pages
3	January 2019	Unaccompanied visit Location: Farmer's home + farm. Discussion and exhibition of farm financial records, farm office, farm administration Context: All animals housed, focus on paper work and administration	Visit Duration: 2 hours Recorded interview: 30 mins Pages of transcribed text: 18	1.5 hours 40 mins 17	2 hours 1 hour 16	45 mins 25 mins 11	1 hour 25 mins 10	7.25 hours 3 hours 72 pages

3.6.2 Secondary Data Sources

While interviews were the primary method of data collection in the study, a number of sources of secondary data were obtained for each case study. As noted by Yin (2009), a major strength of case study research is the opportunity to use many different sources of evidence. These included observations during the farm visits, photographic evidence of financial literacy events and practices on the farms, phone calls with the farmers, and discussions with the respective farm advisors. The researcher's own observations during the farm visits were an important secondary source of data in this study. As noted in Table 3.3 above, the duration of the farm visits was often significantly in excess of that of the recorded interview and these additional informal discussions with the farmer, his/her family, as well as visiting the farm and the farmers' homes provided a rich source of context and insight into the approach to managing the farm from a financial perspective. The opportunity to observe the farmer in their own environment and to observe the locations where financial literacy events occur and how the financial records of the farm are kept and used in the home provides a rich context in understanding financial literacy at a farm level. Such opportunities would be limited with one-off or phone call interviews as the chosen research approach allows researcher to be immersed into the farm context and the farmer's routine on the farm. Visiting each farm three times over the course of a twelve-month period provided an opportunity to consider the temporal aspects of financial literacy as well as an insight into the importance of location and context to how financial literacy manifests itself on each farm over the farming season.

Another important source of evidence from the case studies were the visual records obtained during each of the farm visits. The use of photographs brings a new dimension to existing evidence by capturing additional layers of meaning by adding valuable insights into the everyday worlds of participants and a different kind of data than verbal and written methods (Barbour 2014; Balmer, Griffiths, & Dunn 2015; Glaw et al. 2017). Photographs can show depth and detail that cannot be conveyed through words (Guest, Namey, & Mitchell, 2013). During the farm visits various photographic evidence was obtained with the permission of each farmer documenting the various financial texts and records used on the farm (e.g. record books, receipt folders, farmer calculations) as well as the broader environment in which financial literacy events take place (e.g. kitchen table, the farm office, farm yard). This type of evidence provides more than a mere written description and adds to the richness of the evidence and support for the heterogeneity in financial literacy at a farm level. Photographs, for example,

can help track the progress of the main financial literacy event of the farm – the preparation of the annual farm accounts – from the stage where the receipt is placed on the kitchen counter through to the sorting of the receipts, the creation of a farm accounts folder, to the documents being submitted to the accountant for the tax returns and the receipt of the farm financial statements. This type of evidence allows to move from the abstract to the real, from a set of farm accounts to the process and the people behind these documents and it provides a deeper appreciation and understanding of the complexity of the process and the various participants.

3.6.3 Ensuring Longitudinal Engagement

Phone calls with each of the farmers occurred during the period between visits. These phone calls focused on how the farm was getting on since the last visit, discussing any topical issues relating to the time of the farming season, recapping on any issues raised from the previous interview after an initial data analysis, and organising the next farm visit and interview. These phone calls were an important aspect to the overall research approach as they served to build and strengthen the rapport between the researcher and the farmer which provided an excellent base for the following farm visits. The researcher also had discussions with each of the farms' Teagasc farm advisors. This involved a discussion about their relationship with the farm and farmer over the years and their insight into the farm financial practices, their experience with the case farms and their broader insights into farm financial literacy. A number of phone calls were arranged with these advisors over the course of the twelve-month period and each advisor accompanied the researcher on the first farm visit.

In summary, the research technique chosen in this study was more than a collection of recorded interviews. The nature of the research question and the context in which it was being studied (family farms) required a more encompassing approach to understand the rich and complex nature of the phenomenon. The combination of farm visits, recorded interviews, advisor discussions, researcher observations, photographic evidence and phone calls with the farmers all provided important sources of information and allowed the researcher to triangulate any findings emerging from the data.

3.7 Data Analysis

The analysis of the data in this study was undertaken in a number of steps as outlined in Figure 3.3 below (Creswell 2009). The analysis began with the structuring of the raw data from case

analysis framework as it emerged from the data analysis. The relevant text sections identified were assigned first-order codes in NVivo. Once the initial phase of coding was complete, similar codes were grouped together into themes which were informed from the research framework. For example, the focus on financial literacy being historically situated from the literacy as a social practice framework was seen as a theme in the data analysis phase and it comprised of two first-order codes; tradition and experience. This process was not linear and a number of iterations of the coding structure and subsequent categorisation into relevant themes was required.

To assist with the coding process and to ensure a high level of consistency when coding across multiple cases and interviews, a coding manual was developed. This manual included key definitions for each code and examples that may exist in the interviews. As previously outlined above, the research approach was abductive in nature and thus the coding manual was generated based on a mixed deductive and inductive approach. An initial collection of codes was developed theoretically from the extant literature and this was complimented with the inclusion of additional codes as they emerged during the data analysis process. The codes and themes used to analyse the case studies are summarised in Table 3.4.

Table 3.4: Data Structure for Financial Literacy as a Social Practice

Codes	Themes	Dimensions
<ul style="list-style-type: none"> – Presence of a routine/process for the farm finances – Influence of farming season on financial literacy practices – Temporal importance attached to financial literacy practices 	<p style="text-align: center;">Temporality – Farming/Farmer</p>	<p>Social Practice</p>
<ul style="list-style-type: none"> – Statements about different roles within the household – Delegating/Outsourcing of farm financial practices – Examples of family support for farm financial tasks 	<p style="text-align: center;">Role Assignment</p>	
<ul style="list-style-type: none"> – Statements about the location of financial literacy events – References to the location of where financial literacy texts/records are kept 	<p style="text-align: center;">Place</p>	
<ul style="list-style-type: none"> – Balancing of physical farm work and administration work – Expressions of farm administration as a burden – Delegation of perceived non-core tasks 	<p style="text-align: center;">Domains of Farm Work</p>	<p>Concurrent Literacies</p>
<ul style="list-style-type: none"> – Statements about confidence in using IT – Desire to use more IT to improve financial practices – Influence of formal education levels 	<p style="text-align: center;">Complimentary Literacies</p>	
<ul style="list-style-type: none"> – Compliance with institutional timelines – Making financial decisions to meet institutional timelines 	<p style="text-align: center;">Temporality - Institutional</p>	<p>Institutional Influence</p>
<ul style="list-style-type: none"> – Stakeholder demands for financial information – Influence of financial stakeholders on farm financial decisions 	<p style="text-align: center;">Stakeholder Power</p>	

<ul style="list-style-type: none"> – Dominance of formal financial outputs – Examples of informal farmer financial analysis/rules of thumb – Sufficiency of financial literacy practices – Detachment from formal financial statements 	Dominant vs Vernacular Financial Literacies	
<ul style="list-style-type: none"> – Presence of financial pressure on the farm – Farmer’s view of role/purpose of farming – Statements about next generation on the farm (succession) 	Farmer Focus	Socio-cultural Context
<ul style="list-style-type: none"> – Privacy of financial discussions relating to the farm – Non-economic rationale for financial decision making – Expressions of cultural scripts 	Farming Culture	
<ul style="list-style-type: none"> – Indications of loyalty/aversion to change – Inheritance of financial practices 	Tradition	Historical Context
<ul style="list-style-type: none"> – Importance of the past – Financial situation when farm taken over – Influence of past financial experience 	Experience	
<ul style="list-style-type: none"> – Examples of informal learning – Learning by doing/experience – Statements about social/peer learning 	Sense-making	Temporal Context
<ul style="list-style-type: none"> – Adaption of financial practices for new financial technologies – Aversion to change 	Technology	

3.7.2 Within-Case Analysis

The next stage of the research process (see Table 3.2) involved the completion of within-case analysis for each of the cases in the study which is a key part of the data analysis (Eisenhardt 1989). The exploratory nature of this study's research question underlies the importance of this chapter to provide rich and detail descriptions of each case study. The within-case analysis consisted of codes, patterns and themes which emerged from the data across each of the five case studies. The goal is to develop a rich understanding of how financial literacy manifests itself in farming enterprises through detailed description and analysis of the different constructs. The nature of the research approach, longitudinal case studies over a twelve-month period with multiple farm visits, meant that this stage of the data analysis was an iterative process. After each farm visit, the interviews were transcribed and analysed which informed the next tranche of farm visits and the areas of focus for the interviews.

The data analysis was conducted through the use of analytical tools, such as diagrams, tables and frameworks. This analysis involved a detail description of each case with a particular focus on the main financial literacy event in the farming year. The common financial literacy event of preparing the annual farm accounts provides a baseline for the comparison of the financial literacy practices on each farm. In addition to this, other contextual issues relating to financial literacy in the cases were identified and discussed in detail. The within-case analysis provided the basis to identify how the key themes in the data analysis manifest themselves within each case before looking to generalize patterns across cases (Eisenhardt 1989).

3.7.3 Cross-Case Analysis

Once the within-analysis is complete, the next stage is to complete a cross-case analysis which builds on the emerging findings from each case. The selection criteria for the cases, previously discussed in section 3.5.2, provided for replication logic and allowed the researcher to examine the similarity (or lack thereof) of patterns that emerged across the cases (Yin, 2009). The longitudinal nature of the study meant that the cross-case analysis was an iterative process as additional interviews from farm visits were undertaken and analysed. This study represented the first application of the literacy as a social practice framework from Barton and Hamilton (1998) to the area of financial literacy which necessitated additional considerations in terms of how to present and analyse the case evidence. Emerging themes in each case study were repeatedly compared across all cases to examine consistencies (and inconsistencies). These

emerging patterns across the cases were then compared with the extant literature and research framework to understand how they fit into the overall analysis. Recurrent patterns provided support and validity to emerging themes across the cases which in turn provided insights into answering the overall research question. These patterns were then used in the development of a set of propositions relating to the research framework, as outlined in Chapter 5.

3.8 Research Evaluation Criteria

Despite its popularity, the case study method has been subject to much debate surrounding its rigor, in particular in terms of its reliability, internal validity, and generalizability (Eisenhardt 1989; Miles and Huberman 1994; Healy and Perry 2000; Yin 2013). Some researchers have extended evaluations applied in quantitative research, such as construct validity, internal validity, external validity and reliability (e.g. Yin 2009), while others have translated those terms for qualitative research - credibility, dependability, transferability and conformability (e.g. Denzin and Lincoln, 1994). The chosen research paradigm for this study - post-positivism - led to the adoption of the validity tests proposed by Yin (2009). Each of these tests are discussed in the following sections and summarised in Table 3.5.

3.8.1 Construct Validity

Construct validity refers to the quality of the conceptualization or operationalization of the relevant concepts (Gibbert, Ruigrok and Wicki 2008; Yin 2009), that is, the extent to which the study investigates what it claims to investigate (Denzin and Lincoln 1994). As noted by Yin (2009), construct validity is particularly problematic for case studies, because of the difficulty of defining the constructs being investigated. Potential issues with construct validity in the case study method can be addressed using multiple sources of evidence to triangulate any findings (Yin, 2003). Furthermore, the use of prior theory, having key informants to review case study findings and establishing a clear line of evidence (Gibbert, Ruigrok and Wicki 2008; Riege 2003; Yin 2009) can all help reduce construct validity issues arising. In this study, the researcher employed data triangulation, as described in section 3.6. Multiple sources of data, including interview transcripts, archival data, photographs, telephone conversations, and farm financial records, allowed the researcher to provide rich descriptions of evidence to support the findings. All the data collected was coded and transferred to NVivo 12 and analysed and compared with existing theories. At each stage in the data collection process, after each round

of interviews was complete, transcribed and analysed, a discussion with each farmer was undertaken to discuss the findings and strengthen the chain of evidence through participant validation (Altheide and Johnson 1998; Miles and Huberman 1994; Yin 2009). Other key informants, including Teagasc farm financial management experts and each farm's respective Teagasc advisor, also provided feedback based on the key findings from the cases.

3.8.2 Internal Validity

Internal validity refers to the internal consistency of the research design (Patton 1990). This focus is on whether the researchers have used a theory-derived research framework, if they provide an explanatory research design, preferably also visualized with a graph or model, and if the researcher applied well motivated theoretical sampling (Lock and Seele 2018). Pattern-matching and explanation-building are regarded as valuable tactics for case study methodology (Yin 2009). This study addresses internal validity by employing pattern-matching techniques in the data analysis process for both within and cross-case comparisons. Pattern-matching was further enhanced by comparison with previous literature (Eisenhardt 1989). The use of qualitative data analysis software, NVivo 12, enhanced this pattern-matching process through its aggregation and analysis capabilities. (Richards and Richards 1994; Richards 1999; Seale et al. 2004). Once this pattern-matching was complete, it was possible to combine the within-case analysis findings and compare across cases to build explanations regarding the themes of this thesis in the form of propositions for further research.

3.8.3 External Validity

External validity refers to the extent to which findings can be generalised beyond the immediate sample in the study (Seale 1999; Yin 2009). The problem faced is that the data collected in the case study may not be representative of the population as a whole (or merely representative of those features that are the focus of the research). Case studies rely on analytical generalisation (as opposed to statistical generalisation) where the researcher attempts to generalise a particular set of findings to some broader theory (Yin 2009). Thus the focus of analytical generalisation is to generalise from empirical observations to theory rather than to a broader population. Yin (2009) suggests that each case must be carefully selected so that it either (a) predicts similar results (literal replication) or (b) predicts contrasting results but for anticipatable reasons (theoretical replication). The focus of the research design was to have a number of case studies with a diversity across household structure, household dependence on farm income, and the existence of farm debt. These criteria were influenced by the theoretical framework used as

part of the study, discussions with farm financial management experts in Teagasc, a stakeholder focus group of experts in the field of farm finance and a pilot case study on the researcher's home farm. This thesis addresses external validity by providing detailed descriptions of each case and construct of study. Furthermore, the findings of each case were compared against the other case studies using the recommended replication logic. It is however important to note that this study is fundamentally exploratory in nature examining financial literacy from a novel theoretical perspective. The aim of the study is to further understand the phenomenon of financial literacy as a social practice and how it manifests itself rather than finding patterns and relationships that can be applied in a variety of contexts.

3.8.4 Reliability

Reliability refers to the ability to replicate a study. In the context of case study research, reliability is concerned with the extent to which the results could be replicated if another researcher reproduced the study following the same methods (Seale 1999; Yin 2009). Conditions for reliability are met if the findings and conclusions of one researcher can be replicated by another researcher doing the same case study (Gray 2017). To address reliability, the data collection methods must be well-documented and this can only be achieved if researchers conscientiously document procedures through case study protocols and case study databases (Yin 2009). This study used an interview protocol which is included in Appendix A-3. An audit trail is another principle that is suggested to enhance reliability in qualitative research is an audit trail. Audit trails document the course of development of the completed analysis and provide an avenue for a third party to the research decisions and the methodological and analytical processes followed and, therefore, confirm its findings (Lincoln and Guba 1985). An audit trail was maintained for the duration of this study and includes a log of all research activities, notes and memos from the data collection phase as well as documenting the key research procedures. A final principle to increase the reliability of the information in a case study, is to maintain a chain of evidence (Yin 2009). This chain allows an external observer to follow, in a clear and logical sequence, the derivation of any evidence from initial research question, through the case studies and data analysis, to conclusions of the study (Gray 2017).

Table 3.5 below outlines a summary of the discussed quality criteria for this study.

Table 3.5: Validity Tests

Test	Adopted Tactic	Phase of Research
Construct Validity	Use multiple sources of evidence Establish chain of events Key informants review findings	Data collection Data analysis Report commission
Internal Validity	Pattern-matching Explanation building	Data analysis Data analysis
External Validity	Replication logic Detailed explanation	Research design Data analysis
Reliability	Use of protocols Audit trail Chain of evidence	Data collection Data collection and analysis Data analysis

Source: adapted from Yin (2009)

3.9 Ethical Considerations

This section outlined the steps followed to ensure the research study complied with the key research ethics guidelines and avoided any risk to those that participated in the study. Permission for ethical clearance was requested from the Dublin City University Research Ethics Committee. This research was approved and qualified as a low risk social research project by the Dublin City University Research Ethics Committee in April 2018.¹⁴ The letter of approval from the Research Ethics Committee can be found in Appendix A-6. To comply with the ethical guidelines of Dublin City University Research Ethics Committee individual consents forms (Appendix A-7) along with a Plain Language Statement (Appendix A-8) were used in this study. The individual consent form indicated that participation was voluntary and that participants could withdraw from the interviews and from the study at any time. The form conveyed the intention to use the information obtained in the interviews to make collective analysis. The consent form included permission to audiotape the interview. The Plain Language Statement explained the purpose and nature of the research, the benefits and risks associated

¹⁴ At the time of study, the Dublin City University Research Ethics Committee met every three months. A phone consultation and submission of documentation took place in January 2018 prior to the commencement of the data collection phase. As a low risk social research project, verbal approval was given in January 2018 and formal written approval was provided in April 2018 after the next relevant meeting.

with participation in the study, assurance of confidentiality, details of the participants' function and the contact details of the Dublin City University Research Ethics Committee should participants wish to contact if they had any concerns regarding the study. Prior to the first farm visit, each case farmer received information concerning the study and what was involved in their commitment. On the first farm visit, each farmer was provided with the individual consent form. Each participant was required to sign the consent form prior to the interview. The participants were informed that the interviews would be recorded in the informed consent form and also verbally before conducting the interviews.

3.10 Limitations

This section provides an overview of the limitations of the chosen research methodology for this study. Firstly, due to the nature of the research approach chosen in this strategy - multiple case studies - the findings cannot be generalised to the broader population of farmers or society (Eisenhardt and Graebner 2007; Yin 2009). The theoretical sampling approach taken when choosing the farm case studies is focused on developing theory, not testing it, and so theoretical (not random or stratified) sampling is appropriate. Secondly, this research was situated in a particular context; family cattle rearing farms who are clients of Teagasc. The findings in this study are not intended to be transferrable across all farming systems (e.g. dairy, sheep, tillage) due to the diverse nature of financial situation of the various farming systems as discussed in Chapter 1. As discussed in section 3.5, the choice of only farmers that were clients of Teagasc was part of a research strategy to leverage their existing relationships with farmers along with their experience and reputation for farm level research. This approach resulted in the researcher obtaining a detailed level of access to each of the case farms which was required to study financial literacy in the depth needed to sufficiently address the study's research question. Finally, case study research can have the potential for greater researcher bias in the analysis and interpretation of the data (Eisenhardt 1989; Yin 2009). As outlined in sections 3.6 and 3.8, the chosen research approach for this study has incorporated a number of elements to reduce this potential bias influencing the findings of the study including the triangulation of data sources and case study reliability measures.

3.11 Chapter Summary

This chapter provided a detailed overview of the research methodology adopted for this study. The choice of a post-positivism research paradigm coupled with a qualitative research strategy and case study method were decided as the most suitable for this study given the exploratory nature of the research question and the particular context (i.e. family farms) in which it was being studied. Significant focus was put into the research methodology from initial case selection, interview protocol, data analysis and identification and interpretation of emerging themes from the transcripts to ensure the validity of the research findings. The chapter finishes with a discussion of the limitations of the methodology chosen.

Chapter 4 Within-Case Analysis

4.1 Introduction

Chapter 4 presents the within case analysis for the five cases selected as outlined in the previous chapter. The case analysis below has been framed around viewing financial literacy through a social practice lens. Taking this perspective prioritises the examination of phenomenon in context, through the analysis of financial literacy practices that arise out of key financial literacy events on the farms. The objective of this chapter is to present the first part of the multiple case analyses, which consists of an overview and analysis of each individual case. This will allow the reader to familiarise themselves with each case and identify unique patterns. Section 4.2 presents the steps involved in the within-case analysis, followed by an analysis of each individual case. The chapter concludes with a summary.

4.2 Within-Case Analysis Steps

The within-case analysis is organised and presented in three steps across all cases:

1. Completion of summary case profiles.

Individual summary case profiles were completed to provide an overview of each case farm. This will provide an overview of the farm scale, farming system and household structure in each farm along with other relevant details to the context of the case.

2. Analysis of the main financial literacy event – production of the annual farm accounts.

The main financial literacy event on each farm, the preparation of the annual farm accounts, will be used as a common event across all five case studies to analyse the financial literacy practices on each farm. The collection, organisation and submission of the farm's financial records to prepare (i) a farm Teagasc eProfit Monitor (ePM); and (ii) tax returns for the year are significant financial literacy events on the farm and involve a variety of financial texts, people and various stakeholders in the farm financial ecosystem that require financial information. Teagasc eProfit Monitor (ePM) provides a standardised summary report of the financial performance of a farm over a year and allows benchmarking to be undertaken across farms operating in a similar sector. This has become a standard document across most farms in Ireland due, in part, to its inclusion as a requirement in certain DAFM schemes (e.g. Knowledge Transfer Scheme) and the requirement from many banks as part of loan applications and annual

financing reviews. The ePM and the farm tax returns are examined as a single overarching event as they involve many common steps, financial texts, and stakeholders. This event is broken into a number of phases over the period of the year including financial record collection, financial record sorting, Teagasc ePM preparation, and preparation of the annual accounts in liaison with the accountant. The case analysis for each farm focuses on the financial practices undertaken in each of these phases.

3. Analysis of contextual issues relating to financial literacy.

This step in the within-case analysis focuses on identifying and analysing any additional contextual issues relating to financial literacy that arose in the case.

4.3 Case 1 - F1

4.3.1 Case Overview

F1 (early 40s) is a full-time suckler farmer based in Co. Monaghan. He is married and has two young children. His wife works full-time as a teacher. He farms approximately 100 acres and had 80 cows for calving in 2018. After school, F1 trained as an electrician but then returned to the farm and took it over from his father on a full-time basis in 1995. The farm had previously operated as a dairy farm until he took the farm over and switched to a cattle rearing system. In 2009 he joined his first discussion group¹⁵ as part of Teagasc and grew his herd from 40 to 80 cows.

The farm is considered the primary source of income for the household however it currently has significant levels of debt which is a result of a number of land purchases, new sheds and machinery purchases in recent years. F1 estimates that currently half of the farm profit is used to make loan repayments but he hopes to reduce this significantly in the next 3-5 years as some of the loans are fully repaid. F1 is now an active user of the Teagasc ePM as it is embedded as part of his Teagasc discussion group activities and used as a financial benchmark activity every January.

F1 is also heavily involved in his local GAA club of which he is assistant treasurer for the past number of years. He does not have any formal financial or accounting related qualifications or training but works in this role with a local accountant. He has a dedicated farm office in his house (which he also uses for his GAA role) and he is a regular user of a laptop for farm purposes, including online banking, however all farm financial records and analysis are completed using pen and paper. In our final visit, F1 was actively looking at other farming enterprises as an alternative to suckler cows due to the financial uncertainty around the industry and the need for a stable income to support his family.

¹⁵ Discussion groups are a common method in farming to promote knowledge transfer. They provide an outlet for farmers to share ideas, hear from experts, and to keep up-to-date with new technology. Visits to different farms are often part of the discussion group model in farming. In recent years this form of knowledge transfer has been supported through DAFM supported schemes with farmers receiving annual payments for their participation in discussion groups.

4.3.2 Within-Case Analysis: F1

4.3.2.1 Main Financial Literacy Event Timeline

The annual cycle of accounts preparation on F1's farm involves four sequential steps identified across the three farm visits - receipt collection, sorting, ePM production, and consultation with accountant for tax returns.

1. Receipt Collection (During 2017)

F1 was in the process of preparing his 2017 ePM on the first visit to the farm in January 2018. All farm receipts are collected during the year and placed into a box in his farm office (Figure 4.1 below). Most of F1's sales from the farm will result in cheques which require lodgement, however, in recent years he has had to change his approach to this due to bank closures.

I'm an Ulster Bank man, they've done away with all these Ulster Banks. The Ulster Bank is either in Dundalk or Monaghan so, but the Ulster Bank has an agreement with Post Office in 'Blaney (Castleblaney) that I can lodge it in the Post Office in 'Blaney and they're in the bank the next day. So if I can't make Dundalk or Monaghan, I go to 'Blaney.

F1 continues to use a farm chequebook to pay for the majority of farm expenses and he used five full cheque books last year of which he keeps the stubs for his accounts preparation in order to track the relevant cheque to the associated receipt. In recent years, F1 has started to transition to using his bank card to pay for smaller items but finds that not every farm business accepts these and that the small receipts that are provided (as opposed to the cheque stub) are hard to mind.

I'm starting to pay more now with a card. That's useful for the wee small, you know, anything under €30 or that small it's handy. The only problem with the card, there's a wee slip, the wee receipts are not, they're not, you'd be losing them quicker. That's the only wee problem is, you know, they are harder to put together. I actually started to be stapling them to mind them.

Figure 4.1: Receipt Box in F1's Office



F1 has learned over the years as to what receipts are needed and in what format from conversations with his accountant and from his experience in completing the eProfit Monitor himself. Having a dedicated location in the house, the farm office, does put some additional structure on the financial literacy practices and this is also linked to F1's role as assistant treasurer in his local GAA club. The changing financial literacy practices (e.g. paying by card instead of cheque) also required some getting used to as the lack of cheque book stub and different receipt initially caused trouble for F1 when compiling his financial records at the end of the year.

2. *Sorting (January 2018)*

During January each year, just after the financial year-end for the farm when all the cattle are housed and the workload on the farm is reduced, F1 sorts through the box of receipts for the previous year in preparation for the ePM. This involves the sorting of all receipts into relevant categories to provide more insight for the ePM (e.g. veterinary expenses, animal feed expenses) (Figure 4.2).

Yes, that's what I am at at the moment [preparing the ePM]. I do a bit every night and I do books for the [GAA] club as well. I am the treasurer of the club also and if I don't do the profit monitor tonight, Thursday and Friday because the last two nights were football stuff so I need to sit down and do it.

All of F1's analysis is completed using pen and paper which contrasts with his adoption of technology for other aspects of his farming (e.g. calving cameras) as well as his regular use of a laptop in his farm office for GAA work. F1 always begins with his sales for the year as he finds it the easiest to start with and then he reconciles each of his chequebook stubs with his receipts from his box to come up with totals for each of his expenses. Any expenses that may

be paid by card are followed up using his online banking and relevant bank statements. After this sorting process, F1 prepares a final binder folder (Figure 4.3) that is sorted into income and expense headings as well as the associated receipts for each. This folder then forms the basis of his preparation of the ePM.

I have it [financial records] all put together ... you do the sales first as they are the easy ones... but then you have the expenses to do but I counted that there were five cheque books its unreal what goes into it. It is time consuming.

Figure 4.2: F1's Own Analysis of Income & Expenditure from Receipts

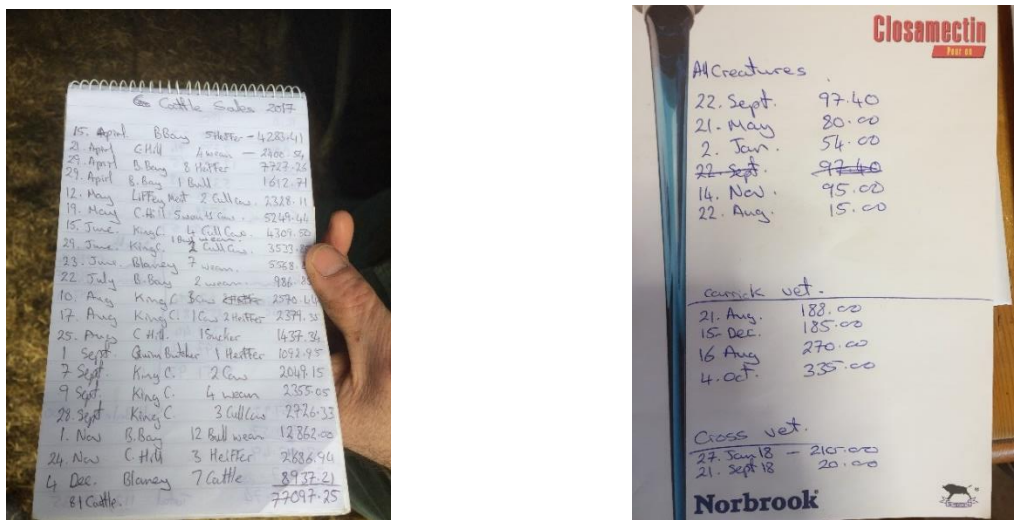


Figure 4.3: Final Tabbed Folder with all Income & Expense Receipts



It is evident that F1 has developed his own method of what works best for him when preparing his financial records. F1 can find the pen and paper approach to be “time consuming”, which can create an aversion for him to start the process to begin with. However, there is an element of tradition in his approach as this is always the way he has done it and from a practical perspective, it allows him to keep his paper work with him in his car and when there is spare time in the farm yard, which is about two miles from his house, he would work away on them to pass the time between farm jobs.

A key insight in this case is that F1 is actively engaged in the process and takes ownership of the collection and analysis of all farm income and expenses. He does not just hand over a box of receipts to his advisor or accountant to process them into a formal financial output. This active involvement has taken on increased importance in recent years with F1 putting more emphasis on the ePM process as the farm has required to pay off loans and come under more financial pressure. The role of social and peer influence is also evident with benchmark farmers influencing F1 about the use and value of the ePM process.

That's one thing with Harry Joyce [model benchmark farmer] too that day [as part of a farm visit on a discussion group] that he emphasised the profit monitor.

The temporal dimension to financial literacy is also evidenced both in the context of when these financial literacy events it takes place (very soon after year end to get value from the process and at a quiet time in the farming and GAA seasons) but also the length of time it takes to complete. From this we can see there are various stages of development that go into the formal financial output that is the Teagasc ePM or the farm accounts for income tax purposes. F1's role as a collector and aggregator of this financial information is key to understanding how he engages with the financial aspects of the farm. He is actively involved in this process and this results in a more meaningful analysis and insight once the formal financial outputs come back to him from the accountant and farm advisor.

3. eProfit Monitor Input and Analysis (January & February 2018)

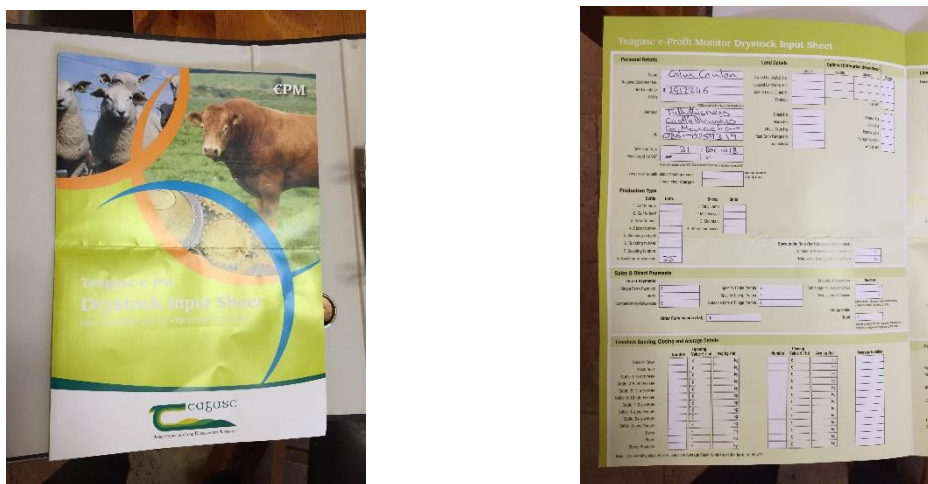
The ePM has become a requirement for F1's discussion group and the group facilitator has set expectations for each member to have the ePM prepared in early January to facilitate timely benchmarking and group discussion soon after the financial year end. F1 is given a copy of a small four-page workbook by his advisor to fill in the key details of the farm (Figure 4.4) which she then takes and submits into the ePM system. The final output of the process (the farm's

eProfit Monitor) is then shared with F1 and also presented at the next discussion group meeting (in an anonymous format) to allow for benchmarking across all participant farms.

F1 admits that he has only taken this exercise seriously in the past three years as the banks have started to look for the document as part of their annual review and from the importance some benchmark farmers have put on the process. Although previously he had still been completing the ePM, he put little time into it and did not use it to inform his decisions.

Well the last three years I would have done it [ePM] serious. First couple of years it wouldn't have been done right like. It would have been done purely as a requirement. Well the banks started looking for it [ePM] and they are on my back about it. It has helped me too to go for the loans and they have changed in attitude that they are looking all the time for accounts and profit monitors.

Figure 4.4: ePM Workbook Filled out By F1



This step provides an insight into the important role and influence the farm advisor has in the process. The advisor takes the informal workings of F1 in a written format and transfers them into the formal financial output of the farm's eProfit Monitor. This allows F1 to continue using the pen and paper approach that he is comfortable with while also still ensuring all the financial records are input into the system and are available for analysis by the discussion group. F1's advisor also has an influence around the temporality of the process by creating a pressure on discussion group members to have their respective farm's financial information completed in January to allow a meaningful discussion and benchmarking to be undertaken early in the year

before the calving period begins. This pressure not only comes from the advisor but from the farmers themselves as there can be competitive element to the benchmarking exercise to see which farms are performing best over the previous year.

4. Consultation with Accountant for Tax Returns (September & October 2018)

While most of the financial information required for the annual farm tax return is prepared as part of the ePM process, it is not until October that these are given to F1's accountant. This is something he mentions he wishes to improve on but finds that once the discussion group meeting occurs in January his commitments on the farm start taking over (e.g. calving starts) and his workload as part of the GAA increases which takes his focus off this exercise until closer to the tax deadline at the end of October.

That's another thing I am trying to improve is if this is done now it's all ready for it to go earlier because when you go October and November it's too late to do any adjustments. So I am trying to do it this month so if he does it up for 2017 this month so you can do something now. I done it in November 2017 for the 2016 accounts last time so it was too late to do anything.

4.3.2.2 Contextual Issues Relating to Financial Literacy

Informal Calculations

The use of rules of thumb and "back of the envelope" calculations (some physically written on paper, others worked out in the farmer's head) are manifestations of how financial literacy can be a much more informal and flexible phenomenon in a farm setting. Examples of these types of analysis observed on the visits to F1's farm included determining the cost of taking credit from a supplier (i.e. the extra price to put the meal on account rather than paying in cash), the cost of feeding cattle during the summer rather than selling them straight away, and the financial viability of late calving cows. These highlight the sometimes informal nature of the financial analysis farmers undertake when making decisions.

You'd be relying on Foyne Valley stores (merchant) down beside me and they are not the hardest to push you and they get used to you and they know you are going to pay at the back end so you would be working on credit with them. And that's why I deal with them, there are other ones (merchants) that you would not get the credit so I stick with the ones then. You might pay a bit more per bag - if you're booking [taking credit] it, it's a tenner more but it worth it for the credit.

I am happy enough the way I am working at the moment, but I will tighten it up. The May calf is not working, there is no money in him. Now they will slip but I am

trying to do away in May. I'd love to get more January and February calves if I can work it.

Account Monitoring

Financial pressure is an important context on the farm as the significant level of farm debt creates a focus for F1 in terms of how he engages with the financial aspects of farm management.

I'll tell you what the big draw at the moment, I have four loans coming in there at the moment, now the farm is meeting them but when they meet them, it doesn't leave a lot back to live on and to run a house, it couldn't be done, you know.

For example, given the farm has several loan repayment dates spread across the year led to F1 using online banking on his laptop in his farm office to more easily track loan repayment dates and the level of funds in the account to pay for this at different times of the year. This temporal aspect has created an increased level of discipline and focus for F1 in recent years on the financial performance of the farm. He even plans to create a calendar to hang in the farm office which clearly marks out the key financial dates for the farm (e.g. loan repayment dates) so he does not miss any by accident.

During the summer now you find yourself at the limit in terms of the overdraft and then there is times you would have to sell [cattle]. Now during the summer, it [farm bank account] would be checked regular. I have a good few loans out there with land I bought and I can see the loans when I log in and that. I was just saying there with the paper work at the end of the year that I must keep an eye when they are coming out that nearly would want to be up on a calendar that sits up in front of you all the time that you aim to. Well it is a thing that I am thinking of this year that I am going to put it up on a calendar because I was all the time you find during the year trying to log into the online and trying to go back to when the stuff is going out.

Social Network/Peer Influence

F1's involvement with the local Teagasc discussion group can be seen as a major inflection point in the financial literacy practices on the farm. This created a new social network for F1 to discuss his business and also in relation to the ePM of the farm a peer pressure to have the ePM of the farm ready for analysis in January of each year. This created a new mindset for F1

in terms of the value and insight the ePM can provide in managing the farm's financial performance.

They've [discussion group farmers] turned into good friends. There would have been boys I would never have known, but I've got knowing them now, they're as good a friend... and they're... you're constantly in communication with them.... you'd be on it nearly every day. Just going over the same problems and keeping in touch, what's the factories or what's going on, what silage is out there, what hay is out there.

F1 also decided to change his bank based on a guest speaker from a different bank that attended this discussion group meeting on one occasion. This bank provided a more personal service than his current provider which was highly valued by F1 and indicates the important social element in managing the finances of the farm.

No, I did change to Ulster Bank, because I was struggling to get a loan for land. I switched to Ulster Bank, and got a loan through Ulster Bank, and then they came into one of our [discussion group] meetings, and Sarah (F1's Teagasc farm advisor) had me talking over that. I did switch then, I got better used to them. My old bank, all went through Dublin, you lost the personal touch. Where the people in Ulster Bank, funny, the man I got used was a farming background, understood. And they came out to the farm, they walked the farm, and they got a feel of the farm and then they worked out, I got a loan through that like.

Planning for the Future

On the final visit to the farm, F1 was actively considering the future of the farm from a financial perspective. The financial commitments of the farm in terms of debt as well as the need for the farm to support the running of the household has focused F1's attention on the financial return being earned on the farm and whether there are more suitable farming systems available.

In 10 years time, I don't know. I can see it, you see when I was growing up 100 acres was a good farm and it's not now. And there's not a lot, like you have the dairying or the eggs or the hens but then there's so many people getting into them things, you know, there's a good amount of them too. So what do you go into, there's not a lot.

I know myself what we're at and we're at a stalemate in the way cattle has gone and our goal and the future doesn't look good. I am, I'm definitely going to scale back on the cows this year, you know. It couldn't support the house on its own and develop, put it that way.

A lot of F1's initial investigations were informal in nature and involved chatting to people in different farming systems and doing informal calculations in his head to determine the suitability. Thus while there was no formal analysis undertaken, F1 is still aware of the financial dependence of household on farm and longer term sustainability of his current farming system.

We haven't got many doors open, I am looking at the dairy but I'm at a stage where age wise and converting sheds is the biggest stumbling block. I would have milking, I have the sheds and everything out the back, you know, and then the problem is, is so many people getting into it. You have that fear of making the plunge, making the plunge and then maybe the value of the milk

4.4 Case 2 - F2

4.4.1 Case Overview

F2 (55) is a full-time beef and cattle rearing farmer based in Co. Kildare. He lives with his wife, who is a full-time teacher, and his two teenage daughters both of whom take an active role in the farm. F2 farms approximately 300 acres with just himself providing the labour for the farm along with regular help from his daughters. The farm is VAT registered which requires VAT returns on a bi-monthly basis. The scale of the farm, the low level of debt, combined with the significant annual direct payments the farm receives from EU/DAFM schemes, means there is limited financial pressure on the farm. Despite this, the physical workload and time pressure are evident and he has made a number of decisions in recent years with a view to reducing this pressure including a potential new solar farm project on an out-farm and the outsourcing of a number of farm administration tasks.

F2 does not have any formal accounting/finance training and he finds the administration side of farming difficult and time consuming. While not fully confident with it, he does use a number of farm technologies, predominantly through his phone (e.g. weather apps, farm news). He has also started to use online banking and has the application set up on his phone. However, most of his interaction with this service is through his wife and daughters who he needs to help him access and use it.

4.4.2 Within-Case Analysis: F2

4.4.2.1 Main Financial Literacy Event Timeline

1. Receipt Collection (During 2017)

As the farm is VAT registered, a VAT return must be completed on a bi-monthly basis. F2 collects all farm receipts for the previous two months and places them into a box (Figure 4.5). The process is dominated by physical records of each financial transaction (e.g. cheque book stubs, receipts, invoices, lodgement slips) with limited, if any, records being kept in soft copy format. Most of F2's sales from the farm will result in cheques from the factory which require lodgement. He regularly uses the express lodgement service available at his local bank which he finds very useful.

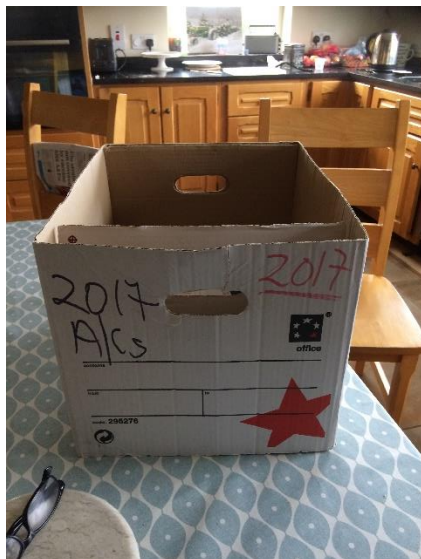
It's great you can lodge it now, you don't even have to go into the bank. Sure they don't want you in the bank now. Lodge it on the side of the street.

F2 tries to use his debit card as much as possible anymore and pays for most of the cattle he buys in the West over the phone rather than sending cheques. However, he still encounters issues using card in some farm outlets (e.g. his local mart) which prefer cheque only.

Now, the strange thing, the mart in Kilcullen doesn't take the card. Because, I don't know what way they have it set up in the west [of Ireland]... you see, some of them card companies charge commission, and you'd be talking about money like cattle, well it works into a lot of money. I was even there one day and there was a man with a card, and they wouldn't take it. And he'd no chequebook with him this man. And they told him that he'd have to go down and get it transferred, he'd have to go to the bank and transfer it.

If someone called here [F2's home] for a bill that was owing, I'd pay them a cheque. I pay for cheques in the local mart because they don't take cards. But most places now, it's on the card. I'll probably put 20 or 30 thousand through the card in one go. Now, I owed there for about 30 cattle in the west of Ireland, they would have cost, I suppose, about €36,000. And I owed one mart €20,000 and I paid them, they actually rang, and I gave them that with the card and I said, here... I rang the other mart, and the card wouldn't go through that day, the daily limits. And she said to ring back tomorrow, which I did, and it went through.

Figure 4.5: Receipts Box in F2's Kitchen



While the overall approach to maintaining the farm financial records is quite informal, the VAT registration of the farm creates a formal timeline that F2 must work towards and also ensures the farm receipts and records are collected on a bi-monthly basis, as opposed to once a year.

There is no dedicated farm office in the house with all farm administration tasks being completed at the kitchen table. This location creates an opportunity of involvement from other members of the family to support F2 with these tasks (e.g. checking online banking, retrieving documents online). There is also evidence of changing financial literacy practices in recent years with F2's increased use of card payments, where available, along with his adoption of online banking. F2 adapts his behaviour as these new practices emerge – e.g. getting used to daily limits on bank cards when paying for cattle over the phone, managing the smaller receipts that are printed when paying by card, and using the quick lodgement services in the bank.

2. IFAC Recorder (During 2017)

While F2 initially completed the farm VAT returns himself, he has now engaged with IFAC to avail of their recorder system whereby a recorder comes to the house once every two months to collect the various receipts and bank statements for the next VAT return. This provides a structure on the financial administration for the farm and means that it is not the end of the financial year (or closer to the tax deadline the following October) that the receipts are collated and given to the accountant. It has also freed up some of F2's time to focus on other areas of the farm.

When I come in in the evening, the last thing you want to do is bookwork. And it's done for me, it's a good service. They come and they bring all the invoices and the paperwork, puts it in the laptop and it goes directly to them in Carlow. So the work is all done for them.

F2 finds the recorder visit very useful as she would normally stay in the house for two hours and work through all the items with him which he found very helpful as he learns a lot himself from the questions he is asked by the recorder. However, in recent months the IFAC recorder changed and now the information is just collected from him and analysed in the office so he feels he gets less benefit from the overall collection process.

I'll tell you, I and most farmers are the same, we're the worst in the world at doing out bookwork and when you have a set thing. Now she [IFAC recorder] was here yesterday. You learn by it as well. I actually preferred the previous recorder. She gave it up. And she used to come out and she used to do the bookwork here. I'd have it all put together and if there was any query, she'd be there and I could even, if there was something missing, I could go look for it. Where this lady comes, I have all the paperwork put together..... takes it away and she comes back and if she has any queries then, but I used to learn a lot more with the other lady.

The outsourcing of the financial record keeping and VAT returns of the farm is something that F2 mentions multiple times during the farm visits and he is very happy with it. The time and labour demands of a farm of this scale means that F2 is happy to delegate these tasks to third parties to ensure they are done correctly and on time. While he did attempt to undertake the VAT returns himself initially, he said it was turning out to be too much work and the risk of missing deadlines or having them incorrect was too big. The success with this outsourcing also led F2 to outsource the preparation for his annual Bord Bia inspection to a third party also (discussed more below). The IFAC recorder also crucially creates a structure and routine for F2 for this financial literacy event, something that was missing before he began using the recorder system.

While the main focus is on time saving and reduced administration burden, there is a social and educational element evident too in the relationship F2 has with the IFAC recorder. The regular visits to the house and ability to discuss and answer questions while the recorder was present over a cup of tea at the kitchen table was something that F2 valued and suggest an important social aspect to the arrangement. F2 is even now recommending the service to his own network of farming friends which highlights the role of social and peer influence in financial literacy events and practices.

I had a friend and he wouldn't have a big farm, but he is actually registered for VAT. He used to be, the same story, dropping down this paperwork and he'd be like myself, there wasn't a lie was on it. I said 'Do you know what you'll do? Go for the recording' and I think I was a year telling him to go for it at least if not more and he's going for this recording system now and he doesn't know himself either.

3. Pre Year End Review (November 2017)

As part of the IFAC recorder service, F2 also has a pre year-end review around October/November time each year. This meeting allows F2 to review the financial performance of the farm in the year to date while also giving time to plan before the farm tax year has finished.

And then when my fifth period goes in, which is then up to the end of October within a couple of days in fairness IFAC would ring me and I'd go down, we'd have a review before the end of the year. Yeah, up till ten months you'd sort of know what you're doing and the same, what, in terms of what we've been doing for the last two months.... It'd be all there on the computer and you'd be going down through it.

This additional meeting with the accountant provides more structure to F2's financial year and provides an ability to plan before the financial year finishes. It also encourages early engagement with the accountant and creates an avenue for more proactive financial decision making on the farm in contrast to a visit closer to the tax deadline date to merely pay the bill for the year.

4. Preparation of ePM (2018)

F2 is part of a discussion group that requires the preparation of an ePM each year for the farm. F2 has no direct involvement in this process as his Teagasc farm advisor obtains his accounts directly from IFAC and uses these as input into his ePM. There is limited discussion of the farm's ePM results as part of discussion group.

I do yeah [prepare an ePM], I do that with Teagasc, with a discussion group, they'd get a copy of my accounts. Yeah, they take it off IFAC, that's the way they do it.

Although the farm completes an ePM each year, there is a detachment of F2 from the process as the financial records go straight from IFAC to Teagasc. This detachment was evident when F2 was first asked about the ePM, he had forgotten that an ePM was prepared for the farm the previous year as he was not involved in the process. This highlights the potential issues with the outsourcing of most or all of the financial administration on the farm as the farmer can become detached from the financial outputs and result in limited analysis being undertaken from these final outputs. It also highlights the danger in relying on high level measures (e.g. number of ePMs being completed by farmers) as reliable indicators of actual farmer engagement with various tools and technologies. Understanding the process behind the preparation and use of an ePM can shine a light into the complex and layered nature of farmers' engagement with financial events and associated financial technologies on the farm. The lack of discussion of the farm's ePM as part of the discussion group F2 is involved in and F2's opinion on the reasons for this ("it's more personal" and "too much of the nitty gritty") highlight an important cultural consideration given the close nature of farm and personal finances of the farmer.

5. Farm Accounts & Tax Return (2018)

Due to the structure of the IFAC recorder system, all farm financial records are already submitted to the accountants for the annual tax return well in advance of the tax deadline. This avoids the “big bang” approach of collecting all farm receipts once a year while also allows IFAC finalise the tax liability earlier in the year and well ahead of their busy season in the autumn each year. F2 would usually go into the IFAC offices once he receives a call from the accountant during Spring each year to finalise the previous year’s tax position and then pay off this bill before the deadline in the Autumn.

As I say we’d have the review in November but sure, like it could be April or May when we would finalise it [tax bill]. Yes, they would call me. You know, they would be trying to get it done because as they’d be getting near the end of the tax year like, they’d be getting busier like in October. I would have a meeting with them and it’d be the same like the review. He’d be going through and he’d have it all up on the screen what is different and what’s not [compared to prior year].

The formal tax return is seen as the completion of the annual financial cycle on the farm and due to the delayed nature of the tax deadlines there would be two annual farm financial cycles active at the same time (for example, the 2017 tax liability will be paid by October 2018, when the 2018 pre-year end review meeting will be taking place). The earlier engagement with the accountant as a result of the recorder system allows the tax computation to be sorted earlier in the year (April/May) rather than a tight timeframe during the autumn, when the accountants have their busy season also. There is a clear institutional influence in terms of the tax deadlines along with the influence of the accountants who drive the timelines. For example, it is the accountant that will call F2 when they are ready for the post year-end meeting to finalise the tax liability for the year.

4.4.2.2 Contextual Issues Relating to Financial Literacy

Involvement of Next Generation/Roles

F2 has a clear focus on involving the next generation in the farm. Both his daughters actively help him both on the farm and with the administration side of the business. F2 is conscious of involving the girls in the “business side of the farm” so they can understand from an early age how it operates. This is also a very helpful for F2 as they can assist with his use of technology such as online banking and animal registration. With the majority of the farm administration work being completed at the kitchen table, this provides an opportunity to actively involve other members of the family even in an informal manner.

Yes, the older girl would now [be involved in farm], she'd do most of the computer work for me because I'm not great at computers. And she'd do that end of it, yeah. Well, she does all the herd register. Even now I have a Bord Bia inspection coming up and she's going to give me a hand to get that right. Even the like of, I would involve her for the simple reason that it makes her more aware of everything that's going on.

She would be smart enough, plus to get her involved even if it's only in the business end of the farm, you know? Because even like, I wouldn't influence her with what she wants to do with her career but I would like if she had some role in farming as well. You know, I'd love her to have a job that she could be part-time farming.

The proactive efforts of F2 to involve his daughters in the farm business highlights the importance of broader social goals in examining the financial literacy practices on the farm. This focus on informal learning and passing on his knowledge is a key consideration for F2 and it is also mutually beneficial as it allows his daughters to take on supporting roles regarding the farm business. There are clearly synergies associated with involvement of next generation and how knowledge can pass in both directions – F2 with an eye on succession but also assistance with changing financial literacy practices (e.g. online banking) and supporting F2 by helping with his IT literacy.

Yeah, well I think farming is a great life and as the girls would say to me, you should have had a boy. If I had had a son I definitely would have been encouraging him to be a full-time farmer. Like, it would have been a great role, me being there, it would have taken the pressure off me and taken the pressure off him that it's grand to be having someone that you can work along with farming, like farming when you're on your own it is tough. Whereas, if you have someone there with you there's not the pressure on it and then the young people are so much better with accounts and computers like, it would have left life easier.

Solar Panel Contract

During the period of the study, F2 had entered into a contract with a company regarding a new solar farm on an out-farm that he owns. This was still at planning stage during our farm visits. This was an important financial decision for F2 and his family as it involved a significant portion of farm land and a contract that could be up to 30 years in duration. This decision was attractive to F2 to reduce the labour demand on the farm while also creating a sustainable income source for the household from the contract. In making this decision, F2 actively engaged with a number of advisors to obtain advice for a big non-routine financial decision such as this. F2 ended up going back to one of his previous accountants as he was familiar with him and trusted his advice.

He's [F2's previous accountant] one of the top men [in an accounting practice] and I met him now for the solar farm and I have his number there now and I'd say any big decision I'd nearly ring him now, because he said that he'd meet me any time.

F2's approach to this non-routine financial decision contrasts with the routine nature of the annual farm accounts task. In this instance F2 proactively seeks advice about the decision and when he is not happy with the advice obtained he is confident enough to keep looking and seek out another advisor. F2's approach to the routine farm accounts task is more compliance focused and less on obtaining advice each year on farm performance and how to maximise the performance of the farm. The role of the previous accountant that F2 was familiar with and knew would talk to him on the phone at any stage highlights the important social and personal factors in choosing financial advisors. A non-routine financial decision like this is not unusual on farms – for example, building a new shed or buying land – and while a formal financial analysis may not be undertaken, F2's approach of having the confidence and ability to seek out professional advice and continue to do so until he was comfortable with it and his decision highlights an important facet of financial literacy.

Outsourcing Farm Administration

F2 has started to outsource a number of farm administration tasks to reduce the burden on his time and also to ensure that the paper work is completed correctly and there are no penalties on his farm payments. The farm financial recording keeping is one of these tasks which is now undertaken by the IFAC recorder on a bi-monthly basis as discussed previously. While F2 has

never undertaken a formal financial management course, it was something he enjoyed in agricultural college and did well at. However, given the demands on his time now and the fact there is little financial pressure on the farm, F2 appears to have a satisficing approach to the financial tasks on the farm which involves outsourcing many of the tasks.

No [never completed a financial management course], and strange thing, when I was in school, I used to love all that. And when I went to ag college, the farm management as it was called was all that. I loved it and got on really well at it. And I suppose, I do what I have to, but I wouldn't be anything like what I used to be back then with... Sure like, there was no problem for me to do it at ag college.

Yes, well actually I registered for VAT first, I did send my returns for the first year but sure it wasn't doing them right and all that. But like unfortunately I was in school I used to love maths and when I was at college, I used to love the accounts and I am the worst in the world then, you'd be out and you come in and you're tired and the last thing you do is paperwork, which is wrong. And if you can get the professional to do it I think you're better off if it's done right, you know.

However, it is not just the financial related tasks that have been outsourced. In recent months F2 has also outsourced the preparation for the annual Bord Bia¹⁶ inspection to a third party company in order to ensure full compliance.

And I got a crowd from Cork to do it [Bord Bia inspection preparation] and I'll never do it again myself.

Figure 4.6: Tom's Bord Bia Inspection Work completed by Agritxt, third party.



The outsourcing of the various farm administration tasks provide evidence of the trade-off that F2 has between the farm “paperwork” and the rest of the farming workload. The involvement

¹⁶ Bord Bia is an Irish state agency responsible for the promotion Irish food, drink and horticulture domestically and globally. They operate Sustainable Quality Assurance Schemes whereby farmers undertaken annual farm inspections to qualify for this certification which results in bonuses for their produce.

of a third party takes the pressure off F2 and allows him to focus on other aspects of the farm. It also suits F2 as he admits that the farm paper work is one aspect he does not enjoy on the farm. However, there is an issue around detachment that was evident in the case as more tasks become outsourced, F2 becomes detached from the overall process and output (e.g. the farm financial performance, the core focus of the Bord Bia audit).

Technology

The interaction of IT literacy and financial literacy in the case provides an interesting insight into the potential complimentary nature of different literacies. While F2 has recently transitioned over to online banking and now has the app on his phone, he still requires his wife or daughters to assist him with operating it. Furthermore, the transition to online banking means that hard copy bank statements are no longer provided. During our farm visits this was causing issues for F2, as the IFAC recorder service requires hard copy statements for each bi-monthly visit and as his wife and daughters were away he could not access them.

I'm in the same bank, which I don't know is a good or a bad thing, because the way it's going sure it's like a computer now and I went online banking there only this spring and I've no statements, which I have to do now when you're gone because I've no bank statements and Fiona [daughter], the girl who's in the Gaeltacht, she'd get it out of the phone for me and the lady was here yesterday and Mary's [F2's wife] not here either and she said I could spend an hour at that. She says they're a nightmare [getting bank statements], which I know they are.

Thus despite F2 using various apps (e.g. weather, farm news), the availability and use of financially focused apps appears to be limited. Furthermore, the move towards online banking appears to be restricted by the institutional influence of the need for hard copy statements for the accountant. There appears to be infrastructural issues in terms of the ability for F2 to adopt financial based technology (e.g. availability, IT literacy) which may help improve the financial practices on the farm as well as the institutional influences on these adoption processes (e.g. banks and accountants still requiring hard copies of various records). F2 is also eager to improve his own IT skills and confidence in using the laptop and has been actively looking for suitable courses to attend, however, many of them are not farmer focused.

Well I wouldn't be great at computers now, I was meant to do a course there in the back-end and it didn't work out. But I'm hoping now I'll do it again.

4.5 Case 3 - F3

4.5.1 Case Overview

F3 (55) is a bachelor who farms over 85 acres in Co. Laois with typically 40 acres dedicated to suckler cows (25 cows) and the rest used for tillage. He lives with his mother (94) and he is her primary carer. F3 left school at 15 in 1979 to farm with his father and inherited the farm in 1986 when he was 22 when his father passed away unexpectedly. There is no debt on the farm and F3 also has an off-farm job which means there is little financial pressure on the farm to provide for the household.

One of F3's biggest regrets is his lack of formal education. He left school early to help his father on the farm and did not get the opportunity to pursue further education. He has no formal financial training but his approach to the farm finances has evolved over the years and was heavily influenced by his sister, a local bookkeeper and company secretary, who would have originally completed the farm accounts for their father. He has a very detailed approach to the financial record keeping and although he would not be comfortable with the more formal financial terminology and outputs such as financial statements, he would have his own approach to understanding the farm finances which he feels works for him. He is an avid user of technology and owns an iPad that he uses frequently for various farm related tasks including online banking and animal registration. Notwithstanding this, all the farm's financial records and analysis are undertaken using pen and paper. The farm is registered for VAT which means VAT return must be prepared on a bi monthly basis.

The absence of a successor to the farm is something that F3 is quite open about and this, combined with the lack of financial pressure on the farm, influences his focus on the financial practices undertaken on the farm. He also has broader objectives he wants to achieve outside the farm. He would like to travel and "put stamps on that passport" and openly discusses the possibility of leasing the farm in the future when his situation permits. Despite these intentions, during my visits to the farm, F3 was involved in auctions for two parcels of land that came up for sale in his locality.

4.5.2 Within-Case Analysis: F3

4.5.2.1 Main Financial Literacy Event Timeline

1. Receipt Collection (During 2017)

All farm receipts are collected in a box that is kept in the hallway in the house and this box is then emptied every two months for the VAT return. F3 keeps a detailed record of all the transactions on the farm in a red cash book that is then submitted to his accountant and used to prepare the VAT return for the farm (Figure 4.7). This cash book is kept for each year's financial records and F3 has kept the book from each year since he started farming and he would often refer back to older cash book records to examine the price of farm outputs or inputs to compare to the current prices.

When I'm going down to the accountant I just bring him down the VAT book and the VAT folder with all the invoices and I don't know whether it's the proper way of doing it or not but it's the way I know. If I want to find anything I know I have a system I can find anything in five minutes, I go to the VAT book and I get a number and I go to the dockets and I get the corresponding number.

Despite not having any formal financial training, F3's approach to the farm accounts came from learning from his sister who used to undertake the job for his father on the farm. F3's sister is a bookkeeper and secretary for a local company.

No, the sister used to do the accounts. The very same system that I do. If I wonder about something I go back to last year and I know last year is right because I would have gone back to the year before or the year before and I would have gone back to where she was at them.

He has since developed his own detailed approach to financial record keeping and analysis on the farm over forty years which he understands and is sufficient for what he needs. While he found it a very steep learning curve when he initially took over running the farm, the farm was not under financial pressure and had no debts which provided some financial flexibility to get started.

I was working away on my own like you know doing the bit on the side and then of course when I took over from him [his father] like I mean I was fired in at the deep end and it was all learning on your feet like you know and luckily enough there was never financial pressure on the place, there was always a few bob sitting in the bank like you know which meant that it was easy you know a little bit, you weren't scrimping and saving like you know and anything you wanted you could go get it.

It's handy [using the credit or debit card] and as distinct from when it started first when you use the debit card the payee comes up on your bank statement now where it didn't always used to before. I remember when I started first using it one day and I used it so sparingly I knew where I'd used it but it didn't appear on the bank statement as to where I'd used it. It said the town but it didn't say anything else like you know which wasn't a whole lot of use to me.

F3 has developed a routine to the financial record keeping on that farm that suits him. There is a clear historical influence in that his approach closely follows what his sister originally did when she was preparing the farm accounts for his's father and whenever he is struggling with a particular aspect he refers to previous years to follow that approach. There is also an element of evolution as F3 adopts new financial practices (debit and credit cards) and adapts his record keeping approach to deal with these type of payments in the cashbook he keeps. While F3 feels it might not be the best or "proper" way of doing things, it suits him and he can easily find information when he needs it.

The institutional and temporal influence of the VAT return is something that F3 finds suits him as it puts a structure on the work during the year and makes him engage with it regularly. While F3 enjoys the "bookwork" when he gets into it, he can find it very hard to get started and having to prepare records on a bi-monthly basis creates smaller deadlines that are more manageable in comparison to a single end of year deadline that would involve a significant amount of work.

I hate starting the book work, but I love doing it, and I love having it completed. And I love it when I'm doing it, and I love to get it done. I hate... it's just a psychological thing, getting it all out and whatever. I like doing it and getting it in order.

2. Sorting (December 2017/January 2018)

Given that the farm is registered for VAT, a significant amount of the work is already complete for the farm tax return by the end of the year. F3 likes to complete a lot of the final accounts preparation over the Christmas period when his workload is quiet on the farm and he has a few days off from his off-farm job.

Normally I try and have a week off at Christmas, and normally I'm bored by the end of the third or fourth day, and I have actually all my cheques now are written for 2017, I have them written into the book already there. I'll probably make a burst and you'll have it 95% complete and it'll take probably three or four months before you just get around to finishing it off.

Despite no formal financial training, F3 still prepares detailed financial records (as seen with the cash book in Figure 4.7) for the farm each year and also a detailed bank reconciliation statement at the end of each year as shown in Figure 4.8 below. This shows a clear understanding of core financial and accounting concepts and while the format and terminology may not be exactly the same as a “textbook” bank reconciliation, the overall outcome and principles are evident and it is sufficient for F3’s needs.

Figure 4.8: F3’s Bank Reconciliation Statement

Bank Reconciliation Statement For 1968/69		31/12/15	
Outstanding Cheques		0.00	478.64
Pays		4.79	123.14
Sam Sunderland	494.9	470.00	
Liffey Mills	495.0	2350.00	
Make Doone & Spillane	495.1	370.00	
Quinn's of Athy	495.2	750.00	
Kevin O'Brien	495.3	80.00	
Matt Leonard	495.4	280.00	
Quinn's of Athy	495.5	190.00	
Mary Lynch	495.6	450.00	
Patsy Condon	495.7	250.00	
Edmund Dunne	495.8	100.00	
M. Lynch	495.9	4944.00	
		496.0	300.00
Ballyadams Parish	496.1	250.00	1102.14
Reconciled Balance @ 31/12/15			11490.78
Reconciled Balance @ 01.01.15			9832.33
Cheque Journal	5778.14		6102.17
Direct Debits & S/Os	16858.04		85925.51
A/c Transfer	20015.86		105961.37
Forfeitures	94440.59		11490.78
			11490.78

F3 also has a tradition of clearing all the farm debts before the end of the year to start from a clean slate for the next financial year. Over the Christmas period he visits all the merchants and suppliers that he has outstanding credit with and pays these bills (this can be seen from the bank reconciliation in Figure 4.8 where there is a collection of cheques written on 31 December each year). One of F3’s biggest problems is to get invoices from his suppliers so that he can pay before the year end.

I love to have everybody paid at the end of my year, I don't want anybody on the books as being an outstanding. The biggest trouble is to get them to give you the

invoice some of them are very slack. And whether it's just a little bit of poor book keeping with them or what, I don't know. I do always say, if you can't pay for it this year's this year, then next year you're going to have to pay for this year's and next year's.

3. eProfit Monitor Preparation

F3 is a member of a discussion group and as part of this he would prepare an annual ePM for the farm with his Teagasc advisor. He would not have prepared an ePM before becoming a member of the discussion group. The nature of F3's approach allows him to complete the ePM just for the beef portion of his farming business as he can break out all expenses items across the beef and tillage enterprises.

Well it's more specific [ePM than overall tax accounts], because we were dealing specifically with the beef [suckler] enterprise. It's that little bit harder to break it down. It's very easy if you have just one operation and it's all going into the one pot, but when you start to split between different enterprises, it'll be hard to sort out. But we did it because I had that list of stuff, I had my vet stuff in one column, I had fertiliser in another.

However, while F3 goes to the effort of preparing accurate figures for his beef enterprise, he admits that the overall results are not really discussed in discussion group meetings. This contrasts with other key performance measures such as stocking rates, grass growth, calving weights which are openly discussed and benchmarked within the group.

We were all handed figures the first day we arrived, of calving spread and growth rates, but nobody's names were attached to the figures, and I could see my figures were out of sync altogether but I remember looking at the best of the guys that were there, and my figure was so far off the scale. I wanted to get to the best guy's figures, or as close as I could get to them. And over a few years, I got there, and like I mean, you're trying to...it's peer pressure, I suppose, but it's good peer pressure. I've learned an awful lot from it, and met guys who I would never have met otherwise. I'd be very supportive [of the discussion groups]

4. Farm Accounts & Tax Return

While F3 would have the majority of the farm accounts preparation complete around Christmas time each year, it would usually not be until the summer time that he finalising his farm records and sends them to his accountant to prepare the final tax return for the year. This timeline is something F3 is looking to improve on as he would like to know earlier in the year his tax

position so he can plan for it and given his off-farm income he is often in a tax refund position which would suit him to get paid this earlier in the year.

I'm trying to get away from rushing down to him around the 15th of October, he's [farm accountant] trying to get me away from that as well. So I'd probably try and get around May or June some time. And then if you have a tax bill coming, you know it's coming. Now having said that, the way it's going here, as often as not, with the income and the tax I'm paying with work [off-farm job] as well, I'm often getting a refund of tax. So if that's coming back in, you might as well get in as early as you can.

4.5.2.2 Contextual Issues Relating to Financial Literacy

Separation of Wages & Farm Bank Accounts

F3 keeps a separate bank account into where his off-farm income goes and all house bills are paid from (the “wages account” as it is known) and a separate farm account. Sometimes, in periods of the farming calendar when cashflows are tight, the wages account will be used to supplement the farm account. However, F3 is adamant that any such money is eventually paid back into the wages account as he wants the farm to pay for itself. This is an illustration of the mind-set and clear goals he has for the farm and how it should fit into his overall financial situation. Interestingly, he is happy to put money from his wages account into the farm account if it makes his life easier (e.g. a new cattle trailer) so there is a clear focus on where the money is coming from and what is it trying to achieve on the farm.

Work income and farm income are kept separate, they don't all pile into one. That's not to say that they don't overlap, tight parts of the year I might pull from one to the other but it'll always be pulling from the wages to support the farm. But I always like to try and reimburse that money, by the time the end of the year comes.

Dominant vs Vernacular Financial Literacy Practices

In examining F3's approach to the financial recording keep on the farm it is clear there is a contrast between the formal financial output (e.g. financial statements, eProfit Monitor, tax accounts) and how he views the farm's financial performance and situation. This can often lead to some frustration for F3 when discussing the farm finances with various stakeholders (e.g. applying to the bank for a loan) as their reliance on these formal financial outputs often does not describe the full story of the farm in his eyes. Thus despite his detailed approach to financial record keeping on the farm (e.g. the red cash book) and ability to prepare and balance his bank

reconciliations at the end of each year, he has a detachment to the main financial outputs (or what could be called the dominant financial literacies) that all other stakeholders would rely on in the farm financial ecosystem.

Well sure look, I suppose how you define a successful year is the profit line at the end of the year. And I suppose we all have different ways of... I remember going into the bank one day with my accounts, I was looking for a loan for something, and I gave them the accounts and I said to the lady, those don't reflect my opinion on the farm. Because, if you're making payments for machinery or whatever, I've a simplistic way of doing... when I'm doing my accounts at the end of the year, I have a big accounts analysis book, I write everything into it, and I total up everything, and I'm able to compare one year with another. I'm able to compare sales, purchases, from my own simplistic view.

I often said I would have loved to studied tax to some small basic degree. I came across a sheet of paper the other night there where I had all of the different things totted up from one year to the next and it was like you know those are my bog standard sort of accounts.

Another example of the contrast between dominant and vernacular financial literacies is the topic of inflation. While inflation is a common issue in farming when comparing the movement of input costs versus output prices, F3 would never discuss this in technical terms such as inflation rates or percentage points. The focus would be on anecdotes of tangible benchmarks to illustrate the impact inflation was having on the farming business. While the concepts being discussed are the same, this emphasises that in different contexts financial topics can be discussed using different narratives and discourses.

I wish to god that the people who are always whinging about farmers or whatever, would see the difference today. I mean, the value of what we are putting out today and the value of what we're taking in to put out that stuff, I mean, the gap has gone so much it's gone crazy. I remember 1992, I went down to the factory, the sugar factor in Carlow to get the returns, there was no such thing as ringing them days, you had to wait for the postman or go down to the office. And I went down and I got the returns for the last three loads of sugar beet that I sent in. And I walked out through the door and I said, I might buy myself a car. I was driving an eight-year-old Ford Escort at the time. And it was the last car my father had bought and I went down to... at the time, an Opel Vectra was the bee knees. And I went down and I bought a white, three-year-old Opel Vectra in Youngs in Roscrea with 27,000 miles on it, for £7,500. For three load of beet.

Succession

The absence of a successor on the farm is something that F3 is quite open about and this combined with the lack of pressure on the farm financially influences his focus on the financial practices undertaken on the farm.

I'm not going to increase anything any further. I'm 54 years of age, I've no debts on me, but I've nobody coming behind me either. And I don't know, maybe it's a bit defeatist, but I don't see the point in trying to much more. I have a fairly secure job that pays fairly well, and I can do... I'm happy enough the way we're going. But definitely, neither of the two enterprises we're at here would be the best paying enterprises now in farming at the minute.

F3 also has had detailed conversations with his accountant about succession and what will happen the farm.

I had probably my most intense discussion with him [accountant] that I've ever had, with regard to that [potential land purchase], and a bit of succession planning and stuff like that, and trying to work...as I say to people, I don't dwell on it at all, but I'm two years away from the same age as my father was when he died, so it's...it'd be foolish not to be thinking of something. And I don't have a successor, there's only one nephew in the family, so I have one brother and one sister, and I'm just trying to see if it was a thing that, I drop dead in the morning, I always say the happiest man in the country would be the tax man, probably. So I had a heavy discussion there now about that, and again of course we had a heavy discussion with the bank manager as well, over looking for a loan there for that piece of ground and that as well.

Partial Budgeting/ Financial Analysis/Rules of Thumb

While F3 may not look at the formal financial output (i.e. financial statements) of the farm when making financial decisions, there were a number of examples of partial budgeting or informal financial analysis being used to inform financial decisions on the farm. In most cases these would have not be in written format but simple calculations done in F3's head. This concept again feeds into the contrast between dominant and vernacular financial literacy practices observed on the farm.

We're feeding both hay and silage and meal to calves at the moment. You're talking...I suppose a bale of straw at the moment, a bale of hay at the moment would be worth I suppose €25. A bale of silage, I suppose near enough to the same, both of them, that's €50 a day, and I think it's about 30 cents a head for 25 calves there are, which is €7.50 a day. So you're talking almost €60 a day going out there.

The trouble with suckler cows, is you don't know how much their costing, we don't know how much they're costing. It's very easy to quantify for tillage - you go out into a field there and you buy whatever seed it's going to take to sow a crop of corn, you buy whatever fertiliser, you get a price on it, you get a price on the contract on work, you get a value on your what you produce, it's harder with the cow because first of all the one thing that'll never be factored in is the amount of time that you spend with her, you know the 3 o'clock in the morning calving a difficult calving like you know we'll never be paid for – sufficiently anyway but the trouble is that we don't know like I mean I put in two bales of straw under 20 cows last night and I just said that's €50 under 20 cows and in two day's time I'll want another bale you know so that'll be €75 under 20 cows.

Last year, I dug up the old books there and last year the sales for straw and hay last year you know was a huge bonus, straw going out there at €25 a bale and hay going out at €25 a bale as well like you know was a huge advantage. This year as I say we're probably back on closing stock for the year, probably between hay and straw we're the guts of 200 bales light you know and even if that's only at €20 a bale, that €4,000 like you know.

Land Purchase Decisions

F3 considers himself an avid saver and has built up a significant pension and savings lump sum from his off-farm work. In recent years he has stopped paying into his pension as he is fearful that it may continue to decline in value. During the twelve-month period of visits to the farm, F3 was involved in two auctions for local pieces of land which would have involved him borrowing a significant amount of money and using most of his savings.

While F3 was ultimately unsuccessful in both auctions, they highlight the complex nature of financial decisions on farms and in particular in relation to land purchases. Despite F3 stating he would like to see the farm leased in the future and to travel and that either land purchase would have used most of his savings and put the farm under financial pressure due to the debt being required, he was still willing to consider it due to how close the land was to the home farm. One of his core reasons was to convert his savings into “something that would be tangible” and that he would having something to show for his lifetime's work.

The land was purely to secure what you're after working for you know that was it like I mean it wasn't a grà [Irish word for love] for it or anything like you know, it was just the fact that you could turn it into something that would be tangible and like land fluctuates up and down a bit but it won't mean the dearest land ever was bought and it was nearly always cheaper the following day.

Thus despite F3's age and his desire not to be under too much financial pressure on the farm, the opportunity to purchase land so close to home was one he could not ignore. This highlights

the complex nature of these financial decisions and the ability for a farmer to rationalise a financial decision in a variety of ways. Interestingly, when he was unsuccessful in the second auction, he was happy as the final price would have put him under too much financial pressure.

I don't want to be under pressure and I'm not under pressure, and that [land purchase] would've put me under a bit of pressure, and myself and the under bidder went into the pub coming home and both of us were happy enough where we were.

4.6 Case 4 - F4

4.6.1 Case Overview

F4 (67) farms 44 hectares in Co Kildare on which he keeps 50 cows. He lives with his wife, who is a part-time nurse, and she is actively involved in helping him on the farm. The family have four grown up children who have all moved out of the family home. Two children were currently building houses close to the family farm during the visit to the farm but due to time commitments none are actively involved in the farm at present. While the farm was previously involved in dairy, the fragmented nature of the farm and the labour commitments required resulted in F4 changing the system over to cattle rearing. With no dependent children to provide for, a pension income for F4 and a part-time income for his wife, there is no financial pressure on the farm to provide for the household. However, this was quite different to the financial situation on the farm when there were four children to provide for and only a part-time off-farm income from his wife.

One of F4's biggest regrets in life is his lack of formal education. He left school at aged 11 in 1963 to work on the farm as his father was taken ill and passed away. There was little choice for him in this regard as his family were not able to afford a labourer for the farm and they also had to pay for his sister's secondary education (this was before free education). This lack of education influences F4's approach to farm administration on the farm, influencing his financial literacy practices, as he feels any "paper work" is a burden and becoming increasingly difficult. Despite F4 having no formal financial training, he and his wife have developed an approach to the farm finances over the years that is sufficient for their needs. There is a clear team effort in terms of the financial tasks on the farm (e.g. record collection, lodging receipts, preparing information for the accountant) and this is also evident in other farm administration tasks such as maintaining calving records.

The absence of a clear succession plan for the farm and active involvement from the next generation is something that is now on F4's mind as he has started to receive the state pension in recent years. This, coupled with his own age, is influencing his approach to financial decision making on the farm.

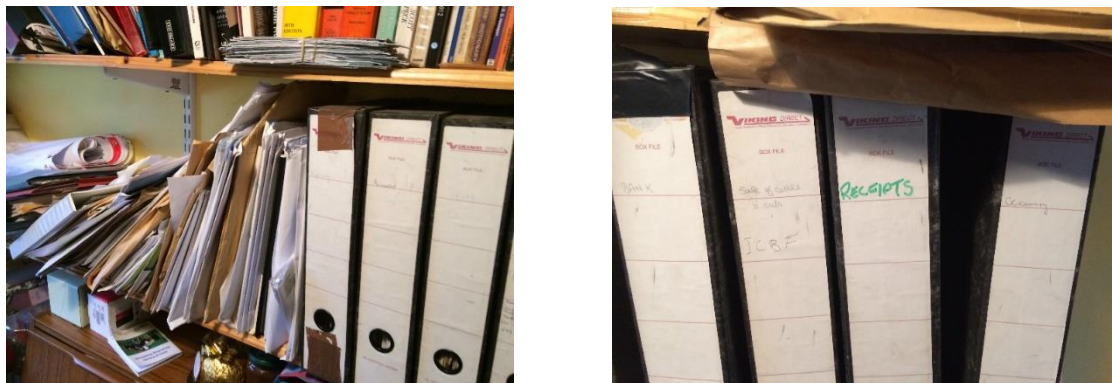
4.6.2 Within-Case Analysis: F4

4.6.2.1 Main Financial Literacy Event Timeline

1. Receipt Collection (During 2017)

All farm receipts are collected during the year and there is a clear routine of moving from window sill when they arrive initially and as that gets filled the receipts are placed into a biscuit tin in a particular drawer in the kitchen for safe-keeping. Once this drawer becomes full, F4's wife will sort through it and transfer all the relevant financial records to the farm office and recycle the rest. While there is a dedicated room known as the "farm office", F4 admits it is more of a storage room for historical farm records and would not be actively used for farm administration tasks. All farm financial literacy practices would take place at the kitchen table.

Figure 4.9: Farm Office



There is a clear joint effort between F4 and his wife in terms of the financial literacy practices on the farm. She would be involved in the collection and maintenance of the farm financial records as well as doing all the day to day banking tasks (e.g. bank lodgements)

It [financial tasks] would be shared, we'd have the burden being shared like we would have two very central roles in that. I would be given perhaps some of the content with Fiona [F4's wife] would be very particular to make sure that the bills were paid and that was it, so it's a joint effort.

While all payments would have been by cheque in the past, there is increased use of direct debits and card payments which F4 finds very useful to save time by paying bills over the phone. Notwithstanding this, F4 is still a bit apprehensive of using the card as it is new to him

Everything has been a cheque up to this year. For personal use it would be very little [card use]. It is being used a little more now, to give you an example would be last week I noticed the car insurance was due and we were able to conduct the business of it over the phone, and rather than drive to the office which would be 20 miles away, we were able to do it over the phone there and then. For parts as well, I'd say it's come into being a lot more I would say in the past 12 months than I would ever have used it. I'm concerned about it at the moment, I'm concerned about it because I'm very new to it.

F4 is also resistant to the use of online banking. Despite using a tablet every morning for his news, he feels he would not have the ability to use online banking nor any need for it. He would regularly keep track of the farm bank account using bank statements that are sent to him in the post, by keeping track of lodgements and cheques since the last statement and by checking the account balance using the local ATM.

2. eProfit Monitor Input and Analysis (January & February 2018)

F4 is part of a Teagasc discussion group of which the preparation of an annual eProfit Monitor is a requirement. He would usually have limited involvement in this process as his Teagasc advisor would deal directly with his accountant to get the figures so F4 would not be directly involved in the preparation of the ePM. While F4 does complete the ePM and receives the financial results for the farm, he readily admits that he probably does not take as much from it as he should as he had left that to his son when he was actively involved in the farm.

Yeah, I would have [looked at the ePM output], I suppose my eldest son did agricultural science and he would have been involved with me on the farm for a few years. So he would have been into more into things like that. He's not involved with me at the moment because he's too busy in what he's doing, and he probably will be coming back into the business, I hope. But you know, I would have taken my eye off the ball for a few years when he was around.

F4 also notes that it takes time to establish trust within the discussion group and that even still many farmers are still reluctant to talk about their farm's financial performance. However, he also notes that those farmers that do discuss it probably get the most out of the discussion group meetings.

It takes time [to establish trust in the group]. To give an example of one group over a three-year period, the first year was very private. People were quite private about where they were going and what they were doing and probably is a bit of boasting in it. And the second year, people were getting to know each other and certainly by

the end of the second year and the third year, it was an open book for 95% of the people.

3. Accountant and Tax Returns (September & October 2018)

In getting the farm financial records ready to submit to the accountant for the annual income tax return, most of the work is completed during the year as F4's wife sorts the biscuit tin on a regular basis and puts the receipts into relevant bundles in folders in the farm office.

The post goes through the window to the small table beside the phone and then from there, when that gets chock-a-block, it's boxed into the various different categories. It would be reasonably well-presented for the accountant.

F4 is a believer in loyalty and avoiding change for the sake of it. He has kept the same accountant since he began his farming career and values the relationship. Similarly, he has stayed with the same bank since he first started farming.

Same bank since I borrow £50 for my first investment back in old gods' time.

F4's wife would be in charge of putting together the folders of information to submit to the accountant. This would usually occur in September/October each year ahead of the online income tax deadline in mid-November.

We know the time of the year and we're both preparing for it, but the accountant either will contact us or we would have it usually ready for the accountant at the given time. End of the year. Yeah, I suppose there's a little bit of a rush towards the end of the year, but it's there.

F4 would then have a discussion with the accountant himself before finalising the tax return. He admits that while he does look at the farm's annual accounts, they would rarely influence his decision making as because of his age he is not focused on changing too much in his farming system.

To a certain extent, yeah, [he looks at the farm's accounts to influence decision making]. I would observe, maybe not change that much though perhaps, I said, I keep referring back to the age. I'm over the hill.

4.6.2.2 Contextual Issues Relating to Financial Literacy

Succession & Future

One important influence on F4's outlook and his approach to the decision making on the farm is his age – he is now 67 and now receiving the state pension – as well as the absence of a clear succession plan for the farm. This has reduced his motivation to make changes to the farm or to focus too much attention on the financial performance of the farm (e.g. ePM or farm's financial accounts) as the household is not dependent on it.

If age were on my side yeah, I would certainly stay in suckling, and would try to improve and improve with breeding and management. I believe myself that the margin between, contrary to what our agricultural people will tell us, I think the margin is not as great between dairy and suckler as we're led to believe.

While both of his sons help on the farm, their family and work commitments have meant this has reduced significantly in recent years and it is something that F4 has become increasingly aware of as he would like to be able to pass his knowledge and experience onto the next generation on the farm.

Yeah, well at this stage there's only myself depending on the farm, there is myself and my wife, four children all taken care of, all doing their own thing. Not near as much as I'd like [family involvement on the farm]. My two sons are very busy in their own professions and I can't see him having the time in the near future, not in my lifetime. I would love to see, because the position the farm is in at the moment and with my knowledge of stock it could kick on and do better things. Now, I would look down the line, I don't think it's going to happen but, partnership is something I would, it's something that I could consider, I could consider it. The reason I would be considering it is, if I could get some younger person with the same interest as I have and I think I could be an asset to them and they could certainly be a huge asset to me. That's where I stand at the moment. I would like to go with my boots on. But I would like to be slightly involved in farming without the responsibilities.

Roles

There is a clear “joint effort” between F4 and his wife when it comes to managing the farm finances and the other farm administration tasks. F4 finds a lot of this work a burden and his lack of formal education appears to influence his attitude towards it.

Obviously paperwork has increased to such a degree and I don't know that, well people of my era, find it very difficult. Perhaps younger people who are now more qualified and more educated

While his wife would be in charge of the day to day banking requirements (e.g. lodging cheques), F4 himself would only visit the bank when any major financial decision/transaction was required (e.g. applying for a loan, meeting the bank manager) – what he refers to as “serious business”. His own experience of running the farm with his mother and having a “joint effort” in terms of the finances mirrors closely the current joint effort between F4 and his own wife

I would have had a free hand on it [farm finances when he took over] but I tended to leave it that my mother would have the last word on it. Or I felt I was putting it in that position anyhow, I didn't want the responsibility but it fell on me but I didn't really want it, so it was a joint effort. It would have been a joint effort. There was no accounting involved whatsoever, my mother was absolutely the accountant and she was absolutely brilliant from a point of view of, she set a target, at that time, it was very, very mixed.

Historical Influence

The past has an important influence on F4's farming outlook and how he approaches financial decision making on the farm. His initial historical influence stems from the time he began working in the farm on a full time basis when his father passed away due to illness. As an 11 year old he had to leave school and his experience of the financial position and pressure – “pure survival” – still resonates with him today and influences his conservative approach to financial decision making on the farm.

I would have left school very early because my Dad was very ill. I think I was about 11 when he had his first heart attack, and we're talking about different times now. We're talking a completely different, like I'm 67 years of age and at that time in, where were we, 1962 or 1963, he would have had a heart attack. The farm at that stage was 44 acres. Back when my dad died, free education wasn't in or anything like that at the time and I think it was necessary for me to go working on the farm because it wasn't going to be able to afford labour, number one. Number two, because my sister was in secondary school and the fees had to be paid to go on further. So, it was my duty apparently to – that's the price I've paid for inheriting. The liability.

F4 also refers to pressure of not losing the original 44 acres that he inherited from his parents.

I probably would yeah [be influenced by that time period], I probably would have been cautious and careful. I often felt that if I started without the 44 acres I probably would have went further. Because I felt it was a draw that I had to be very careful not to endanger that by overdrawing on finances or anything else like that, and start investing in other things. I didn't want to lose the original [land]. That was the big thing, that was the tie in the whole of the land I think.

He also has vivid memories of experiences with his bank looking for access to funding and trying to afford the high interest rates of the 1980's.

I come from an era when I sat down at least three times a year [with the bank manager], when I'm back in those early days. And I mean I did sweat blood and you came down those steps and you were so happy that you were after, you know, getting the go ahead with an overdraft to go on for the next six months. And like when I think back on it and we were paying 18% on some of that. And on one occasion I know I paid, I think the records would show, somewhere around 22%. Thank God I'm not doing that anymore at this hour of my life.

It was a big thing to go in every year and for a couple of years there, that would have been on a six-monthly, maybe three-monthly, that you had to go in and sweat it out with a particular manager. When managers change, one had to do it again, but your record was there. Yeah, I would have built up from my initial starting out, I would have built up a relationship with banks. And luckily enough, I was able to go in to keep the rating.

4.7 Case 5 - F5

4.7.1 Case Overview

F5 farms with her mother on 150 acres in Co Kildare where they keep 50 cows. F5 lives in her own house on the farm with her husband, who works off-farm, and her two young sons while her mother continues to live in the family home on the farm. The farm is run as a joint effort between F5 and her mother who are both involved in the farm administration and physical farm work and all decisions regarding the farm are made jointly.

F5 has a degree in computer science and worked in New York and London before coming back home to work full time on the farm with her parents in 1995. F5's father passed away suddenly two years later leaving both her and her mother to run the dairy farm of 150 cows as it was at that time. They continued with this system until 2003, however, due to volatile milk prices, increased input costs and increasing debt on the farm, it was decided to move from dairy to cattle rearing farming and they have been growing their herd since.

The farm has legacy debt issues which have existed since the farm was operating a dairy system. This has involved numerous negotiations with the banks including a recent restructuring of the farm's loan and overdraft. There is a significant focus on cost control and cashflow management on the farm to ensure the farm is able to service the debt and pay all other bills. The farm itself is currently not in a position to support either F5's household (which has off-farm income from her husband) or her mother's (who is now receiving the state pension).

4.7.2 Within-Case Analysis: F5

4.7.2.1 Main Financial Literacy Event Timeline

1. Receipt Collection (During 2017)

F5's mother has responsibility for collecting all the financial records of the farm and she keeps track of these in a set of trays kept on a kitchen counter that is updated as the post arrives in and as bills are paid (Figure 4.10). F5's mother keeps close control over the farm bank account and can tell F5 how much money the farm has for the month and when cattle need to be sold to service the farm debt and pay the farm bills.

Well mum has a tray there so ins and outs go in different trays. And she's really good because she's so disciplined, as Triona [Teagasc Advisor] will tell you, like I've only got this such an amount this month, I know when I need to sell stuff.

I would know, I would know, look at the cheque books, calculate how much I paid and then I would know the minute the bank, the thing would come in how much I've left. And F5 would go down and look on the machine to see is there anything in it and then you'd have to go and sell something if there's only €1,000 there.

[F5's Mother]

Figure 4.10: Farm Paper Work Tray



There is a clear distinction between the farm and the households in terms of bank accounts. The farm has its own joint account for F5 and her mother while both households have their own separate accounts also. F5 has a clear principle that the farm must support itself and not be reliant on off-farm income to survive.

We've a joint account here [on the farm]. I've a joint account with my husband but none of the farm money goes into the house. They're totally ... I don't draw any ... the money from the pub does not run the farm. No matter how bad it is, that's not the way to run a business. One does not prop up the other. That's the way he wants his business and that's the way I run mine or ours. That's just it. Some people might run it differently, but we have to survive.

All sales on the farm would be paid by cheque and F5 would use the quick lodge facility at her local bank to lodge them. The farm has regularly used a credit card as a source of finance, particularly in the spring time when cashflow can be tight due to limited cattle sales occurring, and increasingly is using card payments over the phone to avoid having to travel to suppliers to settle bills. One concern F5 and her mother do have is that it is harder to keep the records with regards to card payments than it is for chequebooks

No, it is harder to keep them [card payment receipts]. I find it is anyway [chequebook records are better] because you know who you have paid out.

Despite her computer background, F5 does not use any form of online banking and she feels there are security issues with it that she would not be comfortable with. Instead they rely on the bank statements that come monthly, on F5's mother to track all outstanding cheques and lodgements, and on regular trips to the local ATM to check the bank balance. This focus on the farm bank balance is an ingrained part of the farm management due to the debt levels, irregular cash flow patterns due to the farming system, along with a reduced farm overdraft due to the most recent debt restructuring.

We'll monitor the account, we know exactly what's in the account all the time and we know what's going out so we're able to know exactly what we have and haven't. We get the statements every month and then we check the, you know, you got into the, in the bank, we do it in the bank. Yeah, check the balance. You have to, you have to be that... Disciplined.

2. *Sorting (Summer 2018)*

F5 and her mother would give all the receipts and bank statements collected over the year to their accountant usually in the early summer. Their focus is on minimising the amount of work

that is required from them and delegate to the accountant all the detailed sorting and preparation of the farm accounts and tax returns.

I just do the stock numbers, we have enough to do running the size of the farm without doing, like we know what we're spending but the accountant does everything else. I put them in a bag for the accountant. I put the bank - the ordinary account in one heap and the credit card in another, and anything to do with the bank in one heap. Then every other bill, I keep them all together.

3. eProfit Monitor Input and Analysis (January & February 2018)

The farm is also part of a Teagasc discussion group of which the preparation of an annual eProfit Monitor is a requirement. F5 and her mother would usually have limited involvement in this process as his Teagasc advisor would deal directly with his accountant to get the figures. F5 and her mother would look at the results of the ePM themselves to inform their decision making.

Yeah. We would discuss it, mum and I would discuss it with each other

There would also be a discussion group meeting on it but often F5 finds that there can be limited discussion about the farm finances and even when it is discussed it becomes more about bragging than an informative, engaging discussion.

Yeah, last year's one we haven't gone through the group yet, so it's done but we have to do a meeting on it. No, no closed shop [talking about farm finances]. Or either that or they'd be bragging about all they have.

4. Accountant and Tax Returns (June/July 2018)

F5's mother would be in charge of handing over the relevant farm financial records to the accountant. She would keep all the farm's financial records in her house while F5 would keep all animal records in hers. Typically, the farm records are handed over to the accountant in June and the farm accounts and tax returns are given back a month later. F5 is trying to get this completed as early as possible as she completes a joint tax return with her husband and the regular losses made on the farm can be used to offset his business profits.

The middle of summer, it's fairly early, she'd, you know, they're [accountants] fairly on the ball, there's no hanging around and they'd be ringing up with whatever signatures. We get them early because we have, you see how we get them done early, myself and my husband have the same accountants so if I don't make money, he could get some write offs.

4.7.2.2 Contextual Issues Relating to Financial Literacy

Financial Pressure

There is significant financial pressure on the farm given the tight cash flow and farm debt to be repaid. This pressure has been there since F5 became involved in the farm on a full time basis and is fundamental to the understanding the financial literacy practices observed in the farm. Everything on the farm revolves around the payment of farm bills and the farm loan repayments with very little money being taken out of the farm for either household.

That's 350 a month. The last 21 years for nothing. But other than that, it all goes back in to maintaining everything. And keeping the show running.

There is a core focus on making the farm stand on its own two feet and not being reliant on support from off-farm income. The most recent set of accounts available on our visit was an inflection point for F5 as the farm made a profit for the first time in a number of years.

It was good [last year], it was the first time we made a profit, we made a profit, the first time in a long time we made like €3,000 of a profit

F5 and her mother have set clear financial goals for the farm. The focus is on survival from a financial perspective and their rule of thumb is that if they are paying tax that is a good thing.

When asked about the financial goals for the farm;

To be self-sufficient. And to be able to pay tax. Yeah, we want to pay tax. Yeah, if you're able to pay tax you're surviving. And to service your debt as well.

When asked about the plans for the farm for the next 3-4 years;

Maintain itself [the farm] and hopefully make. Maybe to hold onto it is the biggest thing. I have held onto it for nearly twenty-two years. Try and get rid of some of the debt I suppose. Be able to pay as you go.

Financial pressure is also evident in their relationship with their bank in terms of the farm debt. There have been several rounds of negotiations in recent years which have put pressure on F5 and her mother and they have brought in F5's husband and their own accountant at times for support in this process.

Historical influence

The historical influence on the financial literacy practices of the farm is clearly evident from the references to the farm's time operating a dairy system and when F5's father was alive. The inflection point of the passing of F5's father and the financial pressure that the farm and family were under over the next few years has had a lasting impact on both F5 and her mother. The focus is on financial survival and making the farm pay for itself with simple goals, such as turning a small profit and paying tax, coming from her father.

We were very kind of underpopulated. I think we were just in shock after getting out of the dairying. Exhausted. You know. Yeah, so it took us a while to get into it. Then I'd two in college, you know. Well I'd one in national school and two in college when Pat died so that was expensive. Just struggled along. Still here.

No, like Lord of mercy on Liam [F5's father], we were able to pay tax for the couple of good years and that's all he said, all you want to do is to be able to pay your tax. So that's all you want, to be able to pay your tax the same as everybody else. Not to be a sponger, just to be out there doing.

The experience with the banks over the years in relation to the outstanding farm debt and the various negotiations is something that clearly impacted F5 and her mother and influences the approach they take to the farm's finance. They keep a strict focus on repaying the farm debt above all else, including taking any money out of the farm for themselves or to support either household

We still had to meet the money every month. Yeah, because if you don't service your loan they will, they'll just call it in and sell the farm, that's the story with banks, they're just, they're ruthless. And I think that's a lot of problems with families that have propped up children and they were doing the best they could or loans, if they miss a payment the banks have every right legally go in there and take whatever they want. They'll just go in, they're just absolutely ruthless, ruthless.

Yeah, quicker and harder [loan repayments], it killed the farm for about, a lot, about seven, eight years. It actually, we couldn't grow, we couldn't buy anything in, we were just trying to service that loan all the time.

Roles

While the running of the farm is a team effort between F5 and her mother, it is clear that there are certain defined roles that each plays. F5 would be in charge of grassland management and animal records, such as calving records and all of these would be kept in her house. Whereas F5's mother would keep all the financial records in her house and be in charge of keeping the farm budget in line each month and dealing with the farm bank account to ensure it does not become overdrawn.

F5's mother talking about her role;

Oh I would [be closely monitoring the farm bank account], I know exactly, F5 would say how do you know so much, I would know...That's Mrs. Doyle looking for money, I know exactly who it is.

This assignment of roles would appear to mirror what historically occurred between F5's parents before her father passed away. F5's mother continued the day to day financial management role in the running of the farm while F5 took over from her father in terms of bank meetings, grassland management and animal record keeping

Yeah, he [F5's father] would have [done the bank meetings] - I would have done the bills, but he would have done all the borrowing and all the fixing up of paying bills and all of that. I would write the cheques for him and he would do it.

4.8 Chapter Summary

This chapter focused on within-case analysis which provided an overview and analysis of each individual case. The richness of the evidence outlined in this chapter provides support for the use of the literacy as a social practice as a theoretical lens to examine financial literacy on farms. This chapter supports the view that financial literacy at a farm level is a complex and layered phenomenon which is influenced by a variety of social and cultural influences and to examine it purely from a technical perspective would be too narrow. Viewing financial literacy as a social practice helps us address many of those unanswered questions that motivated this research initially (see section 1.2) and that were not addressed in the existing literature including the role of tradition in farm financial literacy practices, the importance of temporality, and the influence of power relationships between the farmer and various financial stakeholders. This approach which combines detailed longitudinal interview data, case visits to experience the farm first-hand, and photographic evidence provides a richer and deeper insight into understanding financial literacy at a farm level and goes far beyond a simple static survey.

Across the cases analysed, the role of replication (Yin 2004) is evident and provides further evidence to support this novel approach to exploring financial literacy. In three of the cases (F2, F3, and F4), the limited financial pressure on the farms provided a focus on the broader social and cultural influences on financial literacy with issues such as succession, family roles, tradition, and farmer values playing a dominant role. This contrasts with the other two cases analysed (F1, F5) which were young, growing households that are dependent on the farm for household income and the farms have substantial debt to service. While social and cultural influences still played a part in influencing financial literacy practices, the primary influence on these farms was the financial pressure on the farm and the need for the farm to provide financially. Table 4.1 provides a sample of quotes from each case study highlighting how socially embedded farm financial literacy practices are on these farms. F3, for example, acknowledges that the lack of a successor has restricted plans for expansion and/or taking on additional debt. In most farms other household members including; mothers (F5), wives (F4), daughters (F2), and sons (F4) are involved in preparing the farm accounts which are very often completed at the kitchen table. F1 refers to the importance of personal relationship and knowledge of farming in the decision to change his bank. The next chapter focuses on these findings in detail by examining the patterns presented from the themes across the cases.

Table 4.1: Financial Literacy as a Social Practice – Sample Evidence

F1	F2	F3	F4	F5
<p><i>That's one thing with Harry Joyce [model benchmark farmer] too that day [as part of a farm visit on a discussion group] that he emphasised using the profit monitor.</i></p> <p><i>I did switch then, my bank all went through Dublin, you lost the personal touch. Where the people in Ulster Bank, the man I got was from a farming background, he understood. And they came out to the farm, they walked the farm, and they got a feel of the farm and then they worked out, I got a loan through that like.</i></p> <p><i>They've [discussion group farmers] turned into good friends. There would have been boys I would never have known, but I've got knowing them now, they're as good a friend... and they're... you're constantly in communication with them.... you'd be on it nearly every day.</i></p>	<p><i>Now she [IFAC recorder] was here yesterday. She used to come out and she used to do the bookwork here. I used to learn a lot [from her].</i></p> <p><i>Yes, the older girl would now [be involved in farm], she'd do most of the computer work for me because I'm not great at computers. I would involve her for the simple reason that it makes her more aware of everything that's going on.</i></p> <p><i>She [F2's daughter] would be smart enough, plus to get her involved even if it's only in the business end of the farm, you know? Because even like, I wouldn't influence her with what she wants to do with her career but I would like if she had some role in farming as well. You know, I'd love her to have a job that she could be part-time farming.</i></p>	<p><i>I love to have everybody paid at the end of my year, I don't want anybody on the books as being an outstanding. I do always say, if you can't pay for it this year's this year, then next year you're going to have to pay for this year's and next year's.</i></p> <p><i>I'm not going to increase anything any further. I'm 54 years of age, I've no debts on me, but I've nobody coming behind me either. And I don't know, maybe it's a bit defeatist, but I don't see the point in trying to much more.</i></p>	<p><i>It [financial tasks] would be shared, we'd have the burden being shared like we would have two very central roles in that. Fiona [F4's wife] would be very particular to make sure that the bills were paid so it's a joint effort.</i></p> <p><i>Yeah, I would have [looked at the ePM output], I suppose my eldest son did agricultural science and he would have been involved with me on the farm for a few years. So he would have been into more into things like that. He's not involved with me at the moment because he's too busy.</i></p> <p><i>To a certain extent, yeah, [he looks at the farm's accounts to influence decision making]. I would observe, maybe not change that much though perhaps, I keep referring back to the age. I'm over the hill.</i></p>	<p><i>No, like Lord of mercy on Liam [F5's father], we were able to pay tax for the couple of good years and that's all he said, all you want to do is to be able to pay your tax. So that's all you want, to be able to your tax the same as everybody else. Not to be a sponger, just to be out there doing.</i></p> <p><i>Well mam has the farm accounts, but everything else is in my house because I'm doing, the breeding and the grazing system.</i></p>

Chapter 5 Cross-Case Analysis

5.1 Introduction

Chapter 4 provides an analysis of each case study examining how financial literacy manifests itself on the farm. Chapter 5 extends this analysis to a cross-case comparison which allows for a broader analysis and identification of common themes across all five case studies. The chapter is structured using the literacy as a social practice theoretical framework (Street 1984; Barton and Hamilton 1998) introduced in Chapter 2 and reproduced in Table 5.1 below. Each dimension is discussed and the salient themes emerging from the five cases are identified along with their associated codes. Based on this analysis, farm financial literacy propositions are then proposed to refine the literacy as a social practice theoretical framework propositions for a farming context.

Table 5.1: Financial Literacy as a Social Practice

Dimensions	Proposition
1. Social Practice	Financial literacy is best understood as a set of social practices; these can be inferred from events which are mediated by written texts
2. Concurrent Literacies	There are different literacies associated with different domains of life
3. Institutional Influence	Financial literacy practices are patterned by social institutions and power relationships, and some literacies are more dominant & influential than others
4. Socio-cultural Context	Financial literacy practices are purposeful and embedded in broader social goals and cultural practices
5. Historical Context	Financial literacy is historically situated
6. Temporal Context	Financial literacy practices change and new ones are frequently acquired through the process of informal learning and sense-making

Source: Adapted from Barton & Hamilton (1998)

5.2 Dimension 1 – Social Practice

This dimension and the associated themes identified provide a foundation to the rest of the cross-case analysis. Taking a dynamic perspective on how financial literacy manifests itself on farms, as opposed to the static technical skill focus, provides a more comprehensive understanding of what the phenomenon entails and its various influences. Examining the financial literacy events and associated practices on each case farm over the period of twelve months provides an insight into *when* farmers engage with financial literacy practices (temporality), *who* is involved in these practices and *what* roles do they play (role assignment), and finally *where* do these events and associated practices take place (place). Each of these themes are discussed in more detail below.

Temporality – Farmer/Farming

The theme of temporality across the cases is very evident both in how it relates to the farmer and to the farming season. In the context of the farmer, influences such as off-farm commitments (e.g. hobbies, off-farm job) and personal preferences play a role in the timing of financial literacy events on the farm. In two cases (F1 & F3), the main financial literacy event of sorting the farm financial records for the year occur during the quiet Christmas period before the GAA season starts (as F1 is heavily involved with his local GAA club) and while on annual leave from his off-farm job (F3).

Ah it has to be [complete in January] as you're hitting calving and you're going to hit the football where I am involved in so you wouldn't get time. You need to get it out of the way this month.

F1

There was a couple of mornings that I haven't worked [off-farm] since Wednesday night, I job-share, so I work Thursday, Friday, Monday, Tuesday and Wednesday. So Thursday night here, I think I went to bed and half two, I was at book work - turn off the television and get into it. And I love it when I'm doing it, and I love to get it done.

F3

The farmers have developed their own routine for the financial literacy events on the farm with some preferring to work at night time once all the farm work is complete (F3 & F5) while others prefer to undertake it during the day at the kitchen table when other family members are present to assist (F2 & F4).

The influence of the farming season in terms of workload management and when the farmer has time available to focus on financial activities is evident across all cases. The busy spring and summer periods mean that a focus on the financial side of the farm takes a back seat with livestock and field work being given priority. In three of the cases (F1, F2, F3), most of the sorting of financial records for the previous would be complete by early January but it can take another six months to finalise their accounts and tax returns as the busy period on the farm takes precedence and the focus will not return to the financials until closer to the Income Tax deadline in the autumn. In the other two cases (F4 & F5), the task is left completely until later in the summer closer to the tax deadline.

I just do the stock numbers but the accountant, as I said, we have enough to do running the size of the farm without doing, like we know what we're spending but the accountant does everything else.

F5

Thus the main financial literacy event on the farm appears to come second in priority to the physical farm work during the year and is fit around the seasonal nature of farming.

Temporality is also evident from the farmers' views of temporal importance of financial literacy practices on their farms. While the timing of three farmers' (F2, F3, F4) financial literacy events are influenced predominantly by deadlines (a compliance based perspective), the other two farmers (F1, F5) focus on when is best to undertake particular financial literacy events to get the best use of the information for managing the farm (a strategic management perspective).

Well I'm trying, I'd love to see the likes of this year maybe moving that into November/December that you're with an accountant before the year finishes. You know what I mean, maybe having an accountant look at it before it [year end] finished so that if there was a problem, we could sort it.

F1

For both cases that were taking this strategic management perspective, significant debt and financial pressure on the farm were evident on the farm. Farmers having a compliance based perspective are driven by Revenue deadlines (e.g. VAT & Income Tax deadlines) and there would be limited use of these records for decision making purposes.

But with the VAT, I always found the VAT was a great thing, you had a deadline every two months to tidy up the drawer to get everything into a file and go again. It's like at all, it's only when we have a deadline that we actually get focused on doing anything.

F3

I only started using the recording system about five or six years ago and they were at me for a long time to go and do it, because I'm registered for VAT you see and I'm meant to be making returns every two months. ... It's easier for everyone this, yeah, yeah. And it gives me a bit of a routine like as well.

F2

For these three cases that exhibited this compliance based perspective, each farm had no significant debt and was not under financial pressure to provide for the household. This can influence the time these farmers allocate to these financial literacy events as other time commitments on the farm (e.g. field and animal work) would be given priority. Whereas the farmers (F1, F5) taking a more strategic management perspective on the timing of financial literacy events were focused on getting information about the financial performance of the farm as soon as possible to undertake analysis and inform decision making. F1, for example, completes his farm accounts in early January each year to ensure he has his financial performance for his first discussion group meeting of the year where all farms' financial performances are benchmarked. Interestingly in the case of F5, there is a big focus put on regular monitoring of the farm's bank account and budgeting for cashflow management given the cashflow constraints on the farm and debt to be serviced. However, this strategic and temporal focus on financial literacy practices on the farm contrasts with the perspective taken to the more formal financial literacy event of the preparation of the annual farm accounts for tax purposes each year which is viewed from a more compliance perspective and not given priority over other farm work as it is fully outsourced to the accountant. This more formal financial literacy event has less importance as the output (the formal farm financial statements) is not used on the farm to inform decision making, whereas the more informal monthly cash budgets and weekly tracking of the farm bank account have a huge importance on day to day financial decisions on the farm.

Role Assignment

The involvement of other parties in financial literacy events on the farm is an important theme evident across all cases studied. In more day to day financial literacy events (e.g. managing receipts & invoices, accessing online banking), other family members can play an important role in supporting the farmer. For example, F4 sees the farm administration as a “burden” and undertakes a “joint effort” with his wife who manages all farm receipts and day to day banking for the farm.

Sarah [F4's wife] would do that [lodge all the farm cheques], I haven't stood in the bank other than serious business in recent times.

F4

In F2's case, his two daughters would regularly assist him with accessing his online banking and printing financial documents for the accountant and he is eager to involve his daughters more in the “business side of the farm” as they grow up. F5 and her mother farm in partnership with clearly defined roles and responsibilities for each partner.

Well mam has the farm, the accounts, but everything else is in my house because I'm doing that, the breeding and the grazing system.

F5

In two of the other cases (F1 & F3), there is little family involvement opportunities as F1 has a young family and F3 is a bachelor. In all of the cases, the farmer utilises the professional services of an accountant to submit the annual tax returns. However, the level of involvement of each farmer in this process differs significantly. In three of the cases (F2, F4, F5), the process is close to fully outsourced to the accountant with the farmer just providing a collection of invoices and receipts.

And if you can get the professional to do it I think you're better off if it's done right, you know.

F2

This outsourcing is in part driven by a need to prioritise time on farming tasks as in two of these cases (F2 & F5) there is significant labour pressure on the farm. This has important implications in terms of role delegation and the possible detachment of the farmer with the financial aspects of the farm, particularly the financial results. The involvement of family members and outside parties, such as an accountant or financial recorder, could be beneficial

in that additional skills and capabilities (e.g. use of software, computers) could help improve the efficiency and effectiveness of the financial practices on the farm. However, what also was observed across the three cases (F2, F4, F5) was that the of the delegation of the financial practices on the farm to other parties can lead to a detachment between the farmer and the financial running of the business (in terms of financial results, financial records). This could have important implications in terms of informed financial decision making and the targeting of educational and other policy initiatives to change farmer behaviour, depending who it is directed at.

Place

Place appears to have an important role in how financial literacy manifests itself on the farm. The location of the farm financial literacy events can be indicative of the level of formality and nature of the financial literacy events on the farm. While three of the cases (F1, F2, F4) have a dedicated farm office, only one (F1) actually uses this for the farm financial work with all the other cases using the kitchen table as the main location for the main financial literacy events on the farm. The formality of structure in F1's case is consistent with his view of the farm as a business that must provide for his family and the limited involvement of other family members in the farm currently.

All the docketts go in a certain place like and they are not here there and everywhere...I have a structure. I have a farm office in the house.

F1

The informality of the kitchen table along with the opportunity this location provides to involve other members of the family to assist is of clear importance to the farmers. F3, for example, likes to watch TV at night when doing the farm financial paper work.

I like doing it and getting it in order. I'd often stay there at the kitchen table until three o'clock in the morning doing stuff like that.

F3

F4 and his wife use the kitchen table as the main farm office for all farm administration work to be undertaken together.

There is an office that one can't get into, so I suppose the kitchen table is the farm office.

F4

F2 uses the kitchen table location to be able to easily ask for assistance from his wife or daughters when working on the farm's financial records, while F5 and her mother utilise her mother's kitchen table as the main location for going through the farm records and financial tasks.

Another aspect of place that appears evident in the cases was the locations that the farmers kept the financial texts and records of the farm. For example, in all of the cases there was a clear routine of how the financial records (e.g. invoices, receipts, bank statements) made their way from the post delivery or farmer's pocket to the end of year folder provided to the accountant. This involved a variety of locations such as window sills (F4), letter trays on the kitchen counter (F5), kitchen drawers (F4), and biscuit tins in the hallway (F3).

...they [receipts] go to the window from the post man, they go from the post man to the drawer, or from the window to the drawer. And once, every so often the fertiliser bag comes in at night and Fiona will go through the drawer and what is going for recycling is in the fertiliser bag and the rest goes to the office.

F4

There's a box out there under the letter box and everything is more or less filed in there then and we have to have – this online system now you have to have them in before the 21st of the following month so it's great because it means that you tidy up the box, get it sorted, you get all your invoices and you get all your statements and you put them in a different folder.

F3

These locations are embedded as part of the financial literacy routine for each of the farms and serve as an indication as to how these routines develop over time and while they may lack the formality associated with a financial recording system (e.g. filing cabinets, folders etc) they are sufficient for each farmer's own needs.

Table 5.2 presents the suggested codes and related themes that reflect this dimension of financial literacy, as evidenced across the five cases.

Table 5.2: Dimension 1 – Codes and Themes

Codes	Themes	Dimension
<ul style="list-style-type: none"> – Presence of a routine/process for the farm finances – Influence of farming season on financial literacy practices – Temporal importance attached to financial literacy practices 	Temporality – Farming/Farmer	Social Practice
<ul style="list-style-type: none"> – Statements about different roles within the household – Delegating/Outsourcing of farm financial practices – Examples of family support for farm financial tasks 	Role Assignment	
<ul style="list-style-type: none"> – Statements about the location of financial literacy events – References to the location of where financial literacy texts/records are kept 	Place	

5.2.1 Summary

The commonality of financial literacy events across the farms (e.g. collection of receipts, preparation for the accountant, discussing tax accounts) and the similarity of the final outcomes in terms of formal written texts (e.g. Teagasc eProfit Monitor output, farm tax accounts) is in contrast to the variety of financial literacy practices observed across the cases. This dimension provides a focus on the *when*, the *who*, and the *where* in terms of how financial literacy manifests itself on farms. It also provides a foundation, through the remaining five dimensions, to explore in more depth how financial literacy manifests itself at a farm level.

This first dimension provides the foundation for the social theory of financial literacy and is organised into three themes: (1) temporality as it relates to the farm and the farmer; (2) the assignment of roles with regards financial events on the farm; and (3) the importance of place in the financial literacy events. The first theme was characterised by the role of time in the financial literacy practices in the cases. The existence of a well-established routine that each of the farmers have developed for engaging with financial literacy events to the farm, the influence of the farming season, and the temporal importance of financial literacy practices on the farm all appear to be significant influences on how financial literacy manifests itself on the farms. The second theme relates to the roles assumed in the financial literacy events of the farm. Within households, various parties (e.g. spouses, sons, daughters) can take on, or are delegated, responsibility for various financial related activities. Furthermore, the role external parties play (e.g. accountant, farm advisor) also represents a key influence on the financial literacy practices. The final theme focuses on the importance of place in financial literacy events and related practices on the farms. The formality (e.g. farm office) or informality (e.g. kitchen table, on-the-go financial analysis while out on the farm) of the locations where significant financial literacy events occur and the locations that financial records and texts are kept as part of a farmer's routine provide a rich insight into the financial literacy practices of the farmers.

Table 5.3 below outlines the updated propositions from this dimension in the context of micro and small cattle rearing enterprises.

Table 5.3: Dimension 1 – Propositional Statements

Dimension	Propositions
Social Practice	<p>P1a: <i>Financial literacy in micro and small cattle rearing enterprises is a social practice that is embodied in the routine of the farmer and is shaped by the temporal nature of farming</i></p> <p>P1b: <i>Financial literacy in micro and small cattle rearing enterprises is determined by the role of the farmer in the production of the farm accounts and the roles assigned to other members of the farming household and external parties</i></p> <p>P1c: <i>Financial literacy in micro and small cattle rearing enterprises is influenced by the physical place where financial literacy events take place and how financial texts are stored</i></p>

5.3 Dimension 2 – Concurrent Literacies

This dimension brings a focus on the different domains of work on a farm and the boundaries between these in terms of different literacies. Understanding how farmers prioritise which jobs to be completed on the farm and the interaction between these different types of farm work (e.g. book work vs. field work) provides an important insight into understanding farmers' financial literacy practices in context and the trade-offs that are needed. The relationships between particular literacies (e.g. IT literacy, general literacy) and financial literacy are also an important aspect to this dimension as some literacies may compliment financial literacy on a farm, while others may compete with it for the farmers' time and attention. The following section looks at both of these key issues in more detail.

Domains of Farm Work

The initial theme identified provides an insight into how farmers can compartmentalise particular areas of their work on the farm and attach, either implicitly or explicitly, literacies that are important and add value to that domain, or ones that can be delegated or outsourced to save time. The trade-off between “farm work” and “paper work” was a common thread across the cases identified and the relative importance of particular literacies in terms of animal health and grass land management for the farm work domain was evident across all farms. However, the other domain of managing the farm – the “paper work” domain – which would encompass financial literacy practices, was more varied as two of the farmers (F2, F4) see this is as time consuming, adding little value and a “burden”. For these farmers, delegation (to, for example, family members in the case of F4) or outsourcing to third parties (e.g. F2 using the IFAC recorder system) made sense as they felt this could save them time.

Yeah, because I... when I come in in the evening, the last thing you want to do is bookwork

F2

I do see it as a burden [farm paper work], yeah, I see it as a burden because it's extra time, it is time consuming, it's more time consuming than, it gets, it seems to be getting more time consuming as time goes on.

F4

However, for the other three farms (F1, F3, F5) each of them did attach an importance to the domain of financial work on the farm but for a variety of reasons. In F1's case, this domain of the farm could add value, in the context of the financial pressure on the farm to improve profitability to service debt and support the household, and thus a significant importance was attached to these financial literacy events and practices in more recent years.

But it's got important like a few years ago we wouldn't have done the profit monitor at all but it actually is telling you a tale.

F1

For F5, similar to F1, there is a sense of necessity to attach importance to the financial domain on the farm given the debt and cashflow situation. However, for F3 the financial literacy work was something he enjoyed doing and took pride in the farm financial records he has kept over the years (e.g. the red cash book) and the financial discipline he has instilled in the farm.

I hate starting the book work, but I love doing it, and I love having it completed.

F3

Thus this compartmentalisation of managing the farm into different domains and the associated value attached by the farmers is influenced by the farm situation (e.g. is the household financially dependent on the farm), by the farmer's own mind-set (enjoyment of the "book work") and broader objectives for what he/she wants out of the farm. The tangible outcomes associated with the physical farm work contrast with the often intangible outcomes in the domain of farm administration and the degree of boundaries between these two domains can often be a function of the farmer's own perception of the value or importance of "book work" to running the farm. In the cases studied, where an apparent boundary did exist, it led to a focus on the literacies associated with the farm work (e.g. animal health literacy, grassland management) in priority to a focus on improving financial literacy practices for example. In such instances, outsourcing or delegating of many farm administration tasks, using a family member or a third party, was often undertaken to reduce the administration workload for the farmer.

Complimentary Literacies

The second theme identified in this dimension relates to the complimentary nature of other literacies with financial literacy. Across all case farms, the adoption of technology was evident across a variety of animal and field work related tasks (e.g. calving cameras, herd health apps, use of iPads for farm news) which results in time efficiencies and a reduction in farmer workload. This was in contrast to the approach all of the case farmers took to the financial literacy practices on their farms which were approached using the traditional “pen and paper” approach. For two of the farmers (F3, F4), this was due to a strong influence of tradition and routine of how the financial records were always kept on the farm going back to the previous generation with many years of farm records being kept on record. However, for the other three farms (F1, F2, F5) it was due to the absence of suitable user friendly applications and software similar to what is available for the other tasks outlined above that they do use technology for. This absence of technology creates an added burden for the farmers, many of whom are already averse to the “paper work” and numerical nature of the financial literacy events on the farm.

Whereas, if you have someone there with you there's not the pressure on it and then the young people are so much better with accounts and computers like, it would have left life easier.

F2

In the case of both F1 & F2, there were expressions of a desire to improve their IT skills to assist with the financial literacy events on the farm but neither farmer had found a suitable course yet that was aimed at their needs.

I wouldn't be great on the computer end and that's an end I would love to tighten up on. It would be all pen and paper for the profit monitor. If I had the computer up and running and going in that I could be doing it during the year its leaving too much. It could do with doing a bit more during the year.

F1

Furthermore, for many of the technology developments in farm financial literacy practices in recent years (e.g. online banking, debit and credit cards), the lack of confidence of the farmers in using these new technologies is limiting their use.

No [I do not use online banking]. Certainly not. I'm afraid of it. I consider myself to be too computer illiterate.

F4

Yes, the older girl would now [involved in farm], she'd do most of the computer work for me because I'm not great at computers.

F2

Another key dimension in this theme of complimentary literacies is the influence of formal education levels on the farmer's confidence in approaching farm administration tasks including financial literacy tasks. Three of the farmers (F2, F3, F4) left school early to work on the farm while the other two (F1, F5) completed second level and third level respectively. For two of the farmers (F3, F4) it was stated as their biggest regret in life not to have achieved a higher level of education as they felt it held them back in certain aspects of farming and in broader life. While all three farmers have developed their own routine in terms of approaching financial literacy events on the farm, there was a notable lack of confidence in their approach to the certain financial tasks (e.g. reading financial statements, discussing farm tax accounts) which involved more formality and technical financial terminology than the informal routine they are comfortable with on their own farm.

I can't ever understand why my mother didn't put her foot down [about leaving school], And if I'm to be truthful, it's something that grates with me all the time, because I was good academically, and I would have liked to have... looking back on it now, I certainly would have liked to continue [formal education]

F3

Table 5.4 presents the suggested codes and related themes that reflect this dimension of financial literacy, as evidenced across the five cases.

Table 5.4: Dimension 2 – Codes and Themes

Codes	Themes	Dimension
<ul style="list-style-type: none"> – Balancing of physical farm work and administration work – Expressions of farm administration as a burden – Delegation of perceived non-core tasks 	<p>Domains of Farm Work</p>	<p>Concurrent Literacies</p>
<ul style="list-style-type: none"> – Statements about confidence in using IT – Desire to use more IT to improve financial practices – Influence of formal education levels 	<p>Complimentary Literacies</p>	

5.3.1 Summary

Analysing financial literacy in isolation, without examining those literacies that are competing with it (in terms of adding value to the farm – either based on reality or the perception of the farmer), or complimentary to it (e.g. IT literacy in reducing the administrative burden, creating more accessibility for farmers with a lack of formal education or financial training) provides a narrow view of the phenomenon on farms. Taking a more encompassing view of financial literacy practices, suggested by this dimension, opens up the possibilities in terms of a more comprehensive approach to understanding farmers’ financial literacy practices and ultimately influencing farmer behaviour.

The codes found across the cases that captured how this dimension is manifested are organised into two themes: (1) the boundaries between the domain of farm work and the domain of farm administration; and (2) the complimentary nature of some literacies with financial literacy practices. The first theme was characterised by the apparent regular separation of the domain of farm work, which would include physical work on animals, fields, and machines, and the domain of farm administration, which would include financial record keeping, farm office work, and paper based work. The expression of farm administration, including financial related

tasks, as a burden and the delegation of these perceived non-core tasks were two other evident dimensions of this theme in the cases.

The second theme focuses on the complimentary nature of other literacies with financial literacy on the farms. A common theme across the cases studied was the complimentary nature of IT literacy and financial literacy practices. The influence of farmers’ confidence in using IT and the desire to utilise IT more to improve financial literacy practices were two key dimensions to this theme. In addition to this, the formal education levels obtained by the farmers appear to have a significant impact on how they approach the financial literacy practices on the farm.

Table 5.5 below outlines the updated propositions from this dimension in the context of micro and small cattle rearing enterprises.

Table 5.5: Dimension 2 – Propositional Statements

Dimension	Propositions
Concurrent Literacies	<p>P2a: <i>Financial literacy in micro and small cattle rearing enterprises competes with other farm related literacies (including grass management and animal husbandry) for the farmer’s time and attention</i></p> <p>P2b: <i>IT literacy and formal education attainment complement financial literacy in micro and small cattle rearing enterprises</i></p>

5.4 Dimension 3 – Institutional Influence

This dimension provides a focus on the farm financial ecosystem and the various players in it including banks, accountants, farm advisors, Teagasc, DAFM, and the Revenue Commissioners. The farmers are at the centre of this ecosystem and the interactions with each stakeholder would be seen as financial literacy events. The power each stakeholder has in the financial ecosystem will depend on the context of the farm. For example, in all the farms studied, tax deadlines for Income Tax and VAT would be adhered to as it is a legal requirement whereas in two of the cases (F1, F5) there was significant farm debt which would mean the bank would have significant power in the relationship compared to other farmers with little or no farm debt. Understanding the dynamics of this ecosystem and the influence each institutional stakeholder can have on a farmer's financial literacy practices is key to understanding the phenomenon in more detail.

Temporality – Institutional

The first evident theme in this dimension relates to the institutional influence on the temporality of farm financial literacy practices. Various institutions, through their deadlines (e.g. Revenue Commissioners) or through their payment schedule (DAFM/EU payments), effectively impose a farm financial calendar which creates a structured cycle of farm financial literacy events. In two of the farms (F2, F3) the farmer is also registered for VAT which provides an added temporal dynamic of bi-monthly VAT returns to be lodged. In F3's case, he completes these himself as he likes the structure and discipline that the bi-monthly returns put on his farm financial records.

I'm registered for VAT for a long time but I'm used to doing my own accounts and the best thing ever is the recorder because they come out every two months. I have to have the paperwork for them, and everything is done on time. You can't push it back and it's done and it goes straight into their system

F3

Whereas F2 outsources this completely and brings in an IFAC recorder every two months to take away the relevant financial records and complete the VAT return.

The best thing ever is the recorder because they come out every two months. I have to have the paperwork for them, and everything is done on time. You can't push it back and it's done and it goes straight into their system when the lady goes through everything here and plus I have all my receipts here, before this I used to be

bringing them down to the accountant and you could, you wouldn't have a clue you know if you wanted to look back at something. Now I have them in a lever-arch and I can look at my receipts and the account period to see

F2

This creates a more structured and focused approach to the financial literacy practices on the farm in comparison to the farms that are not registered for VAT and thus are not required to maintain regular financial records and can leave this process until close to the Income tax deadline the following October. Both F4 and F5 would not submit their relevant financial records to their accountant until the summertime in advance of the October/November income tax deadline. F1 however would be more proactive in his financial preparation as although he is not registered for VAT he is a member of a progressive farm discussion group that has a financial benchmarking meeting every January to compare the previous year's financial performance. Thus there is both advisor and peer pressure, as well as his own desire to find out how his farm is doing compared to his peers, to get a lot of the farm financial records sorted in early January each year. From the above it is clear that there are a variety of institutional influences on the temporality of the financial literacy practices on the farms.

Stakeholder Power

Power relationships also have an important influence on farm financial literacy practices. The existence of farm debt and the reliance on the farm on DAFM/EU payments can significantly increase the power of these stakeholders in their relationship with the farms studied. Two of the farm cases studied (F1, F5) have significant farm debt and as a result a lot of the financial decisions on the farm were centred around their relationship with the bank. For example, F1 uses online banking regularly over the summer months to track the farm account as he has a number of loan repayments coming out and wants to avoid breaching the overdraft on the account.

I know when my loans come out so I am gauging my sales to my loans. I have a good bit of an overdraft to cater for that as well but I am selling to meet the loans

F1

F1 is also finding that his bank is demanding more financial information on the farm on a more regular basis than in the past which has increased his focus on the farm's ePM also.

Well the banks started looking for it [eProfit Monitor] and they are on my back about it. It has helped me too to go for the loans and they have changed in attitude that they are looking all the time for accounts and profit monitors.

F1

F5 finds that she will have to sell cattle at the wrong time of the year to service the debt repayments as her farm overdraft is not large enough to support the financing.

Well it's just I don't even want to sell at the minute but you have to live. We used to have a big overdraft but as part of restructuring of our loan when we, because it was just too much, they took away about half of our overdraft so that's curtailing us a lot more.

F5

The power of certain stakeholders and the implications of damaging the farm's relationship with them (e.g. loss of funding from the bank, removal of EU supports, tax penalties) can create significant financial pressure on farms and also create frustration and confusion when the requirements from each stakeholder in terms of the timing, format, and content of required financial information can vary across each party.

But we still had to meet the money every month. Yeah, because if you don't service your loan they will, they'll just call it in and sell the farm, that's the story with banks, they're just, they're ruthless.

F4

Dominant vs Vernacular Financial Literacies

In certain situations, various stakeholders reinforce the use of particular standardised financial outputs such as in F1's case of the bank asking for the farm's eProfit Monitor output which would already be prepared by Teagasc for use in DAFM discussion groups. However, other situations can arise where various stakeholders can require different financial outputs for the farm which can lead to frustration and confusion for the farmer. The role of standardisation of financial outputs on farms has increased significantly in recent years with Teagasc's eProfit Monitor now becoming a standard in terms of presenting and analysing farm financial performance.

Various stakeholders have assisted in this increase in relevance as they have incorporated the eProfit Monitor as part of their requirements (e.g. DAFM knowledge transfer scheme require an eProfit Monitor to be completed, many banks will accept an eProfit Monitor). The other

standard output for the farms studied was the tax accounts prepared for taxation purposes (Revenue). Thus the dominant financial literacy in farms are centred around these two outputs and all the cases prepared both financial documents.

However, from the cases studied, it is clear that many of the farmers fail to fully understand what those standard outputs tell them and that the preparation of them is often outsourced to Teagasc and their accountant (e.g. in the case of F2, F4 & F5) rather than being completed by the farmer themselves. In the case of F3, his bank required the submission of his annual farm accounts as part of a loan application but he admitted he struggled to interpret what they actually meant as he had his own way of viewing the farm's performance.

You'd be looking for a loan during the year and you'd send the bank down to the accountant and get all that he'd like, unfortunately there was a set of accounts that I have mean nothing to me, unfortunately I don't understand them at all and I'm long enough at them to know that I should I've a fairly basic set up like you know but those set of accounts are for the taxman you know.

F3

Similarly, for F2, F4 and F5, while they do prepare an ePM for the farm, they give it little consideration once received as they also have alternative ways of measuring the farm's financial performance. The prevalence of more informal or vernacular literacies was evident in the cases studied. Smaller "back of the envelope" calculations or informal partial budgeting would be more prevalent on a day to day basis of farmers' interactions with financial literacy. F1, for example, discussed the cost of housing cattle for the winter using his own mental arithmetic to inform his decisions.

We were just away for ten days and we put in nine cull cows just for handiness in the shed. The other neighbours feeding them, but they're going to have six round bales of hay ate for ten days for nine cows and we're working it out a €35 a head, it's working out at €2 a cow a day, and that's only dry cows. So you see that and factor that in.

F1

Both F3 and F4 would judge the financial performance of the farm by how much was left in the bank account at the year-end – a yardstick that is regularly referred to by all farmers across the visits.

I suppose if you've a few bob in the bank at the end of the year and all the bills paid [would be a good year]

F4

This contrast between the formal standard outputs of eProfit Monitor and tax accounts to the more informal analysis undertaken by farmers can lead to frustration and confusion for the farmers when they are presented with the formal outputs and are unable to interpret them. A stronger focus on the actual approach to calculations and analysis farmers undertake during the year, as opposed to just the final year end outputs and statements, provides a much richer view of how the farmers make financial decisions and view the financial performance of the farm.

Table 5.6 presents the suggested codes and related themes that reflect this dimension of financial literacy, as evidenced across the five cases.

Table 5.6: Dimension 3 – Codes and Themes

Codes	Themes	Dimension
<ul style="list-style-type: none"> – Compliance with institutional timelines – Making financial decisions to meet institutional timelines 	Temporality - Institutional	Institutional Influence
<ul style="list-style-type: none"> – Stakeholder demands for financial information – Influence of financial stakeholders on farm financial decisions 	Stakeholder Power	
<ul style="list-style-type: none"> – Dominance of formal financial outputs – Examples of informal farmer financial analysis/rules of thumb – Sufficiency of financial literacy practices – Detachment from formal financial statements 	Dominant vs Vernacular Financial Literacies	

5.4.1 Summary

Viewing the farmers’ financial literacy practices through the prism of the financial ecosystem that the farm is a part of provides a richer understanding of the key influences that drive farmer behaviour. The financial context of the farm can influence the relationship and power distribution between the farmer and the various financial stakeholders. The interaction between formality at an institutional level (e.g. tax returns, ePM, bank loan applications) and informality

at a farm level can create a disconnect and frustration for farmers. Understanding how this influence impacts on the financial literacy events and associated practices provides a deeper understanding of how financial literacy manifests itself at a farm level.

The codes found across the cases that captured how this dimension is manifested are organised into three themes: (1) temporality as it relates to institutional influence; (2) the power of various stakeholders in the farm financial ecosystem; and (3) the interaction of dominant and vernacular financial literacies. The first theme relates to the institutional influence on the temporal aspects of financial literacy on the farms studied. The interaction of Revenue imposed deadlines (e.g. Income Tax, VAT), DAFM scheme requirements to prepare eProfit Monitors for the farm schemes (Knowledge Transfer Scheme), annual bank requirements to produce financial information, and the payment profile of direct payments from the DAFM and EU have a significant temporal influence on the financial literacy events and practices of the cases studied. The second theme focuses on the power of various stakeholders in the farm financial ecosystem. These stakeholders can put a variety of demands on farmers for various financial information about the farm and also influence the financial decisions made on the farm. The final theme is focused on the interaction between dominant and vernacular financial literacies. There is a contrast between the formal financial outputs on farms (e.g. tax accounts, eProfit Monitor) and the more vernacular and informal financial texts and financial outputs that farmers themselves prepare to inform their own financial decision making. While the formal outputs are required by various institutions and are standardised across all farms studied, the more informal texts and analysis vary considerably across the farms.

Table 5.7 below outlines the updated proposition from this dimension in the context of micro and small cattle rearing enterprises.

Table 5.7: Dimension 3 – Propositional Statement

Dimension	Proposition
Institutional Influence	P3: <i>Financial literacy practices in micro and small cattle rearing enterprises are shaped by the financial information demands and timelines of financial stakeholders and the power these stakeholders have in their relationship with the farm</i>

5.5 Dimension 4 – Socio-cultural Context

This dimension brings a focus to the broader socio-cultural factors attached to both the farmer and the farming community in general that can be used to understand how financial literacy manifests itself at a farm level.

Farmer Focus

The financial reliance placed on the farm by the household, coupled with the farmer's own view of the purpose of farming – whether it is a business or a vocation – appear to be significantly influence the financial literacy practices undertaken. In the cases studied, farmers who are dependent on the farm to support their household (F1), or who may have significant farm related debt (F5), tended to have a much stricter view of farming in terms of the financial return it must generate to be worthwhile for the time commitment. This meant a much more rigorous approach to managing and engaging with the financial performance of the farm.

Ah you would, you would [feel financial pressure], there is not a lot of spare cash in it. To try to reseed, and do work and to put money aside to do work, its not in it. There are only certain jobs, its funny, the house was built in 2005 and I still have the outside to do and I hope to start to do this this year like.

F1

[I want] To be self-sufficient. And to be able to pay tax. Yeah, we want to pay tax. Yeah, if you're able to pay tax you're surviving. And to service your debt as well.

F5

In contrast, the farmers who were under less financial pressure for the farm to provide (F2, F3, F4) due to off-farm income and/or low levels of farm debt, tended to have a much stronger view of farming as a way of life and a vocation and that as long as the farm was not a financial drain on the household overall, it was manageable.

I have a fairly secure job that pays fairly well, and I can do what I want. I'm happy enough the way we're going

F3

I think at this point age is a big factor with me. Like I realise that we're not going on forever and I don't see why I should be investing a lot more into farming now that I can invest in it. But I'll continue to do it [farm], yeah.

F4

Such an insight is important in terms of understanding farmer behaviour when it comes to the financial literacy practices undertaken and also for education providers and policy makers to understand the key drivers of farmer behaviour. The financial context of the farm and the farmer's own world view of where farming sits in this appear to be important influences in understanding financial literacy on farms.

Another aspect in this theme is the role of a successor on the farm in the focus the farmer puts on the financial side of the business. It appears from the cases studied that the absence of, or uncertainty around, a successor can reduce the motivation to continue to improve the farm financial performance and position significantly. In the case of F3, where there is no clear successor to take over the farm, and for F4 his increasing age and uncertainty about farm succession appear to contribute to tendency to favour the status quo and not make any major changes to the business as there is little incentive to look forward too far with the farm.

I'm not dependent on the performance of I [the farm]. And it's probably a very laissez-faire attitude, but I don't have kids, I don't have college to provide for, I don't have a successor coming after me. And all of those things, maybe it's too much like hard work, it's like just rolling it over again, it's easier to continue than start chopping and changing.

F3

This contrasts with F2 who has two young teenage daughters both of whom are actively involved in the farm. Despite having little financial pressure on the farm and outsourcing a lot of the financial work in recent years, F2 has taken more of a focus in recent years back on this aspect of the farm to be able to show his daughters "the business side of things" and prepare them for the future.

She [F2's daughter] would be smart enough, plus to get her involved even if it's only in the business end of the farm, you know? Because even like, I wouldn't influence her with what she wants to do with her career but I would like if she had some role in farming as well. You know, I'd love her to have a job that she could be part-time farming.

F2

Farming Culture

The other theme identified in this section focuses on the culture of farming which include issues around a general reluctance to discuss information about farm financial performance and practices in broader social settings along with the apparent non-rational economic decision making that can occur, particularly for large farm financial decisions. Discussion groups have

become increasingly popular in the farming community for the past decade, thanks in part to various DAFM schemes which have brought them into the mainstream. The sharing of information in a common social setting of farming peers has been very effective for the case farmers studied in picking up new ideas. However, across the case studied, there was a general reluctance in the groups they were involved in to discuss any farm financial information in detail or how each farmer would approach financial record keeping on the farm. The inherent closeness of farm financial performance and the individual/household's own personal finances can create an issue of privacy and an aversion to discussion of such issues in the public domain, which is in contrast to the tendency of the same farmers to be happy to discuss other aspects of farm performance including animal performance and grass growth rates in those same social settings. Comments about it be "too personal", "a private matter", and a "closed shop" indicate the general level of reluctance to discuss financial matters in detail.

No, not very much financial [discussion in the group], no, there'd be no financial, no. Calving dates, and yeah, like you know, grasping the management and stuff like that. I think probably finance is probably too sensitive for anybody.

F3

No, they wouldn't emphasise it [ePM results], because I suppose it's more personal. They don't, but as a part of the discussion group, they need a copy of your records. No, I suppose if you're getting into too much of the nitty gritty, yeah.

F2

Yes, some people would [talk about the farm finances]. Some people would talk very openly about it. However, some people would still remain very private, but I think the ones who were speaking openly were the ones who were taking the most from the groups.

F4

It should be noted that in one case (F1), this farmer's discussion group, driven by their Teagasc advisor, have a much more progressive focus on farm financial performance and all farmers produce eProfit Monitors by January of the following year and there is a group discussion on each farmer about what went well or poorly in the previous year. This creates a timely and active discussion around farm financial performance while also creating a structure for farmers in terms of preparing their annual accounts and interpreting them. It also creates a sense of peer/social pressure to have your financial performance ready for the discussion group, as

opposed to the legal (tax deadlines) pressure which only occurs the following October which is very late to have useful information for financial decision making.

This theme also encompasses the financial rationale that can be used by farmers when making big financial decisions. Across three of the farms studied (F1, F3, F4), there were recent land purchases (or attempts at auctions) which would have put financial pressure on the farm. These financial decisions are not always solely guided by financial/economic decisions and, in particular in terms of local land that becomes available for sale, broader socio-cultural rationale can heavily influence a farmer's decision making. In F3's example, despite him discussing the possibility of leasing out the farm in the future and wanting to travel more, he was willing to enter into two auctions for local parcels of land that would have involved him spending his life savings and taking on farm debt.

I mean the land was purely because it was close and it was a way of turning what is a very liquid asset that I have at the moment in terms of investments into something that's a little bit more secure. That was the big thing.

F3

This was justified in F3's mind as they were so close and the tangible asset he would have would give him something to show for his life's work (as opposed to cash sitting in a bank account). This insight into how farmers can rationalise financial decisions is important when understanding the behaviour of farmers and the financial decision making that is undertaken.

The final aspect in this theme focuses on the farmers' use of cultural scripts when discussing particular financial phenomenon. Cultural scripts in the context of disease management on farms has previously been examined by Vanclay and Enticott (2011). For certain financial aspects of farming, the farmers appear to have their own approach to making sense of the topics using narratives, catch-phrases and mini-stories to help their understanding and articulation of certain financial phenomenon. For example, F3 when discussing the price movements over the years of farm inputs and outputs provides historical examples of the price of grain relative to the price of machinery and how this has changed over the years.

A friend of mine down the road told me himself and his father-in-law had a discussion years ago as to know who had it better, the son-in-law in the eighties as it would have been, or the father-in-law in the fifties and sixties. And of course both of them said the other had it better. And the son-in-law reminded the father-in-law that he had told him that in 1959 he went into Perry's in Athy and bought a brand new combine, and the combine cost him £800. And there was a scarcity in malt and barely that year in 1959, and malt and barely made £40 a tonne. 20 tonne of malt and barley bought the brand new combine. How many tonne of malt and barely would you need to buy a new combine now? A lad down the road bought a brand

new combine this year, I think we made it up it would take him something like 1150 tonnes or something, as against 20. And that's the difference, that's where it's gone wrong.

F3

For F3 and F4, when asked about how they would define a good year financially on the farm, their focus was on having money left in the bank at the end of the year. This illustrates the ability of farmers to engage with more complex financial phenomenon using approaches and discourses that they are more comfortable with.

Table 5.8 presents the suggested codes and related themes that reflect this dimension of financial literacy, as evidenced across the five cases.

Table 5.8: Dimension 4 – Codes and Themes

Codes	Themes	Dimension
<ul style="list-style-type: none"> – Presence of financial pressure on the farm – Farmer's view of role/purpose of farming – Statements about next generation on the farm (succession) 	Farmer Focus	Socio-cultural Context
<ul style="list-style-type: none"> – Privacy of financial discussions relating to the farm – Non-economic rationale for financial decision making – Expressions of cultural scripts 	Farming Culture	

5.5.1 Summary

In understanding how financial literacy manifests itself at farm level, significant weight must be put on the broader social-cultural perspective of farming rather than seeing it solely as a traditional business. The farmer's view of the role of farming (i.e. business vs vocation), the role of succession and the influence of the broader farming culture are some key influences that appear in the cases studied.

The codes found across the cases that captured how this dimension is manifested are organised into two themes: (1) the farmer’s focus on the farm; and (2) the underlying culture of farming.

The first theme relates to the level of financial focus being put on the farm by the farmer. This varied significantly across the cases studied from farms (F2, F3, F4) where there was no financial pressure to other farms (F1, F5) where there was significant farm debt and a growing household to support. How each farmer views the role of farming in their lives – i.e. whether it is seen as strictly a business that must generate a financial return or whether it is seen as a way of life or a vocation – can have a significant influence on the financial literacy practices on the farm. Furthermore, the presence of a clear succession plan also appears to influence the importance and value put on financial practices and planning on the farm. The second theme is focused on the culture of farming and the interaction this has with financial literacy events and practices on the farms. The inherent closeness of farm’s financial performance and the individual/household’s own personal finances can create an issue of privacy and an aversion to discussion of such issues in a public/social domain. Furthermore, certain financial decisions made on the farms in this study cannot be readily explained by rational economic behaviour – e.g. buying local farm land is one example in at least three of the cases studied (F1, F3, F4). Finally, the use of cultural scripts when discussing particular financial phenomenon (e.g. inflation, financial viability) is a common approach noted amongst the farmers.

Table 5.9 below outlines the updated proposition from this dimension in the context of micro and small cattle rearing enterprises.

Table 5.9: Dimension 4 – Propositional Statements

Dimension	Proposition
Socio-cultural Context	<p>P4a: <i>Financial literacy practices in micro and small cattle rearing enterprises reflect the personal objectives of the farmer</i></p> <p>P4b: <i>Financial literacy practices in micro and small cattle rearing enterprises are shaped by the importance of privacy, ties to the land and the broader cultural practices of farming</i></p>

5.6 Dimension 5 – Historical Context

This dimension focuses on how financial literacy practices on the farms are historically situated and influenced by both the importance of tradition and the past financial experiences of farmers. Both of these aspects are discussed in more detail below;

Tradition

There appears to be a strong sense of tradition with farmers in terms of the financial literacy practices that are undertaken and who is involved in them. The continued use of a pen and paper approach to the financial records on all of the farms is in contrast to the adoption of technology in other aspects of the farm to save time and labour (e.g. calving cameras, online herd registration apps). For example, in F3's case, his detailed approach to the financial records of the farm was passed down from his sister who used to prepare the farm accounts for his father before he took over the farm. F3 follows this system rigidly each year as it allows him to compare directly his financial records (the farm "cashbook") every year to compare the farm's performance and to understand any issues that arise with the accountant.

My sister is a company secretary and a book keeper, that was the template she did. She used to do it all the time here when my father was alive. The very same system that I do. If I wonder about something I go back to last year and I know last year is right because I would have gone back to the year before or the year before and I would have gone back to where she did it.

F3

In F5's case, her mother would have always kept the farm financial records in her house and would be in charge of the farm cash budget each month and paying the bills, a role she also took on with F5's father before he passed away.

Yeah, he [F5's father] would have [done the bank meetings] - I would have done the bills, but he would have done all the borrowing and all the fixing up of paying bills and all of that. I would write the cheques for him and he would do it.

F5

Furthermore, for the farmers there appears to be a loyalty to those stakeholders who are closely involved in farm financial literacy practices with a certain aversion in terms of the willingness or desire to change accountant or bank. For four of the farms (F1, F2, F3, F4), they are with the same accountants and bank since they started farming. This again may also be linked to the

role of tradition as those banks and accountants would have been used for the previous generation farming also.

Yeah, I'm with IFAC [accountants] yeah, I'm with them years.

F2

I'd be a creature of habit as well like, if somebody doesn't do me any harm, I certainly will try not to do them any harm. I think there is something in loyalty. All my life [with the same accountant]. Since we started keeping accounts. Yeah, we'd have the same accountant and I'd highly recommend him.

F4

Experience

Another influence on financial literacy practices that was apparent in the cases was the role of the farmers' past financial experiences. Previous experiences of dealing with banks, financial pressure on the farm and the experience of farming in more difficult economic times all appear to impact significantly in how the farmers approach their farm finances. For F4, who took over running the farm in the 1960s during a tough economic climate, his approach to the farm finances is one of conservatism and being satisfied with what he has.

Pure survival then [when he took over the farm]. Probably not huge debts but it was a pure survival thing. There was, the income wasn't there. Conservative, conservative would have been yeah, over the years there would have been debts alright but never huge. Coming from the background I come from, coming from that I think I would have been concerned [about too much debt]..

F4

His detailed memory of the 1980's with high interest rates and difficulty in getting financing for the farm also significantly influences his view on the reliance of banks for funding to run the farm.

I come from an era when I sat down at least three times a year [with the bank manager], when I'm back in those early days. And I mean I did sweat blood and you came down those steps and you were so happy that you were after, you know, getting the go ahead with an overdraft to go on for the next six months. And like when I think back on it and we were paying 18% on some of that.

F4

F5's experience of taking over the farm shortly after her father's passing is also one of financial hardship with increasing debt levels and mounting costs something that is regularly referred back to during the farm visits. This period is seen by both F5 & her mother as the start of their

farm debt problems and the focus has been on reducing this ever since. Their subsequent experience with the banks over the intervening years has heightened the importance for them of the farm being independent and not reliant on outside support

Yeah. We were very kind of underpopulated. It took us a few years to ... I think we were just in shock after getting out of the dairying. Exhausted. You know. Yeah, so it took us a while to get into it. Then I'd two in college, you know. Well I'd one in national school and two in college when Pat died so that was expensive. Just struggled along. Still here.

F5

More recent financial experiences with banks and volatility in the farm income also appear to influence how the farmer approaches managing the farm finances and the financial literacy practices that are undertaken. F2's experience of not being able to obtain loan financing to purchase stock when he needed it due to a long loan application process focused his resolve on not relying on the banks for funding on an ongoing basis in the future.

Oh, well the banks were a different operation then, you were... you felt you were a part of them, you were made welcome. And I would have known all the staff by their names. And even the manager, I would have known him, one of the managers in Kilcullen, I would have known him by name and if I was out and I met him, I'd go over and maybe have a drink with him. Sure that whole attitude changed now, sure they don't want you now.

F2

F1's experience of the volatility of market prices for his output and the cost of inputs over the past decade and the growing reliance of his household on the farm's income is forcing him to be much more rigorous in his approach to monitor the farm's financial performance as well as starting to research alternative farming systems with a view to the future.

In 10 years time, I don't know. I can't see it, you see when I was growing up 100 acres was a good farm and it's not now.

F1

Table 5.10 presents the suggested codes and related themes that reflect this dimension of financial literacy, as evidenced across the five cases.

Table 5.10: Dimension 5 – Codes and Themes

Codes	Themes	Dimension
<ul style="list-style-type: none"> – Indications of loyalty/aversion to change – Inheritance of financial practices 	Tradition	Historical Context
<ul style="list-style-type: none"> – Importance of the past – Financial situation when farm taken over – Influence of past financial experience 	Experience	

5.6.1 Summary

The financial literacy practices on the farms need to be considered in the context of the history of the farm and the farmer. New financial literacy practices do not appear without context and those financial literacy practices that were observed over the visits to each farm are heavily influenced by the past. By understanding how financial literacy is historically situated in terms of the importance of tradition with the farmers’ financial literacy practices as well as the farmers’ past financial literacy experiences, we can begin to better understand the complex way in which financial literacy manifests itself at a farm level.

Two themes emerged from the codes found across the cases that captured how this dimension is manifested: (1) the role of tradition in the financial literacy practices undertaken; and (2) the past experiences farmers have had with financial literacy events and practices. The first theme relates to the strong role that tradition plays in farming and the financial practices undertaken. Across the cases studies, there was evidence of financial literacy practices being inherited from previous generations and a sense of tradition in terms of how and when certain financial events and practices take place and who is involved. The second theme focuses on the past financial experiences of the farmer and how these experiences influence and shape the financial literacy practices currently undertaken on the farm.

Table 5.11 below outlines the updated proposition from this dimension in the context of micro and small cattle rearing enterprises.

Table 5.11: Dimension 5 – Propositional Statement

Dimension	Proposition
Historical Context	P5: <i>Financial literacy in micro and small cattle rearing enterprises is shaped by the cumulative financial experiences of the farmer and the role of tradition passed down from previous generations</i>

5.7 Dimension 6 - Temporal Context

The nature of financial literacy practices on the farms is that they can regularly evolve and adapt due to either internal (e.g. involvement of a new generation) and/or external (e.g. bank requirements, new technologies) influences. The emergence of these new practices is not always a smooth, linear process and the process of embedding a new financial literacy practice on a farm is a complex phenomenon. The following sections look at two key aspects of this process in terms of farmers' ability to make sense of their farm's finances in a way that suits them and the role technology plays in changing farm financial literacy practices.

Sense-making

The changes to farmers' financial literacy practices can occur for a variety of reasons and do not follow a smooth linear pattern nor do they appear to arise from formal financial education interventions. Farmers in the cases studied appear to evolve their own financial literacy practices to meet their own requirements – i.e. that they are sufficient for the perceived purpose in which they are intended. F3, for example, has developed his detailed financial routine for the farm initially from his sister and then he adapted it over the years to suit his needs.

and I don't know whether it's the proper way of doing it or not but it's the way I know. If I want to find anything I know I have a system I can find anything in five minutes.

F3

For F4, changes to financial literacy practices can be slow as there is an importance attached to tradition and a reluctance to change from current habits. F4 has never undertaken any farm financial management course and credits his current approach to the financial literacy practices on the farm to experience.

I would never have done courses or anything on finances or any type of management skills or anything. That was just something you either had or you didn't have, you either learned the hard way or you didn't. I suppose a lot of it was just through experience of life.

F4

However, for other farmers, often due to an inflection point in the farm lifecycle, changes to financial literacy practices can occur a lot quicker as the farmer seeks to adapt to a new set of

objectives of the farm and farm finances. F1, for example, in recent years has taken a much more active and engaged role in preparing the farm's ePM each January to understand the farm's financial performance much earlier in the year and improve his financial decision making. This has involved F1 being much more focused on managing the farm's financial records during the year and engaging with his advisor and discussion group peers to benchmark the farm's performance. F2 has engaged an outside recorder service who now comes every second month to prepare the VAT returns for the farm as F2 found he did not have the time himself to complete the returns on time with the other tasks to be completed on the farm. The visit of the recorder allows F2 a learning opportunity himself to ask questions and to understand why certain financial texts and records are required which was not possible when he was completing the returns himself initially. In both F1 & F2's cases, the learning of the new financial literacy practices was informal and emerged in an organic way as the needs of the farm and/or the farmer changed over time. For both, the opportunity of learning appears to focus on social situations (e.g. F1 and the January discussion group, F2 and the regular visit of his farm recorder) which reflects a more informal environment that both farmers appear comfortable in discussing financial related topics.

The above examples are an important insight and contrast to the more mainstream financial literacy literature that takes the view there is a certain standard of financial literacy knowledge that is required across all persons. However, it appears from the case studies that farmers can adapt their approach to understand what is required to run their farms in what is akin to a sense making process (Weick 1995, Hayden et al. 2021). This may involve learning new practices themselves (e.g. F3 completing a VAT return, F1 completing and interpreting an ePM, F5 learning to negotiate with the bank) or it may be that they enlist the support of family members (e.g. F2 with his daughters to learn about online banking, F5's husband providing his business experience to assist with bank negotiations) or third parties (e.g. F2 outsourcing the VAT returns to the IFAC recorder). This suggests the phenomenon of financial literacy is a lot more complex than merely a universal level of financial knowledge required by all and that adopting this universal view can miss the nature and forms of financial literacy that can exist in various social settings, such as a farm.

Technology

The second theme identified in this dimension focuses on the role that technology has on the changing financial literacy practices of farmers. Across all cases, the adoption of technology

was being used by farmers to increase efficiency, reduce labour input and in general create an easier life for the farmer (e.g. calving cameras, health administration software, field measurement applications, iPads for farming news). However, the adoption of financial related technology appears to be slow and can often link back to concerns around privacy, tradition and the offering of farmer-friendly technology available. There are however some elements of technology that are having a significant impact on farmers' financial literacy practices – the increased adoption of online banking and the use of card payments instead of chequebooks are two such examples.

In three of the cases (F1, F2, F3), online banking is now playing an important part of how the farmer manages the farm finances and provides the flexibility and accessibility of being available at any time as opposed to once a month with traditional bank statements. F1 uses online banking regularly on his laptop in his farm office to track the several loans the farm has and the various repayment dates to ensure there is enough in the farm account to service these. F3 would access his online banking using his iPad to keep track of the farm account and to access his statement for preparing the VAT returns on a bi-monthly basis. F2 is only starting to access online banking and requires assistance from his wife or daughters currently to use it but he does feel it is a resource that will be very helpful to him and he is actively looking for an IT skill training course to improve his confidence in this area. However, two of farmers (F4, F5) were reluctant to engage with online banking at all due to privacy concerns (“*big brother*”), the tradition of getting the bank statement in the post as well as a confidence in their current approach at estimating the farm bank balance and checking at the local ATM. In F4's case, there is a reluctance to engage with online banking as he doubts he needs it as his years of experience of estimating his bank balance would be accurate enough for his needs.

No [I do not use online banking]. Certainly not. I'm afraid of it. I consider myself to be too computer illiterate. I don't need to. Little bit of a mathematical brain so it wouldn't be too far out.

F4

The impact of technology on how farmers engage with their banks was another key insight in the cases. While some farmers (F1, F2) found these changes useful (e.g. quick lodge facilities), other farmers felt that technology had replaced the personal relationships with the bank that had been so important in the past and resulted in simple financial tasks being made a lot more difficult.

Certainly, when I started first, we knew the [bank] manager, the manager knew us. It was more family orientated. Everybody knew everybody. Today it's press buttons. And again, I suppose to put it on record that for older people, it's quite difficult when you can't go into a cashier and lodge your cheques or get out your cash.

F4

For F5, her prior experience working in the IT industry and her experiences with the banks have made her reluctant to engage with online banking. Between her mother's detailed approach to managing the monthly finances and the location of an ATM close to the house to check the bank balance if needed, she feels there is no significant need for online banking for the farm.

I would know, look at the cheque books, calculate how much I paid and then I would know the minute the bank, the thing would come in how much I've left. And F5 would go down and look on the machine to see is there anything in it and then you'd have to go and sell something if there's only €1,000 there.

F5's Mother

The movement towards more card payments as opposed to the traditional use of chequebooks is something that was observed across all the five farmers studied. The flexibility of the card payments to pay suppliers over the phone rather than having to travel to each to write a cheque was something that appealed to the farmers.

I'm starting to pay more now with a card. That's useful for the wee small, you know, anything under €30 or that small it's handy.

F1

However, there were some issues that the farmers encountered which slowed the adoption of card payments fully. F2, for example, found that some agricultural outlets, such as his local mart, still do not accept card payments which meant he needed to bring his chequebook. For both F2 and F1, they found the card payment receipt was a lot harder to keep than the traditional chequebook stub for the end of year records and both farmers have now developed a habit based on past experience of lost receipts to ask the supplier to staple the card receipt to the invoice before they leave the store to ensure they will not be misplaced.

The only problem with the card, there's a wee slip, the wee receipts are not, they're not, you'd be losing them quicker. That's the only wee problem is, you know, they are harder to put together. I actually started, you need to be stapling them, they're smaller, they're not high like.

F1

F3 also found that initially any card payments he made using the farm account did not appear clearly on his bank statements (i.e. the name of the supplier being paid) which made it very hard to track for the end of year accounts and made him reluctant to use the card. This is something that has improved in the past few years and has made him a lot more comfortable using card payments for the farm.

These experiences and interactions of the farmers with technology highlight the complex nature of the relationship and how it can involve the emergence of new financial literacy practices at a farm level. It would also highlight concerns around the continued push by some powerful stakeholders in the farm financial ecosystem towards the use of more technology (e.g. increasing fees for chequebooks, removing paper based bank statements, online only applications for DAFM schemes) which may isolate particular cohorts of farmers who due to a lack of confidence in their IT abilities or a sense of tradition wish to maintain their current approach which works well for them. Issues around confidence, privacy concerns and an inherent desire to continue a tradition or routine in terms of certain financial literacy practices (e.g. writing the cheque and having the cheque book stub) suggest the influence of technology in not a one-way process and institutions will need to be cognisant of this when seeking to influence farmer behaviour.

Table 5.12 presents the suggested codes and related themes that reflect this dimension of financial literacy, as evidenced across the five cases.

Table 5.12: Dimension 6 – Codes and Themes

Codes	Themes	Dimension
<ul style="list-style-type: none"> – Examples of informal learning – Learning by doing/experience – Statements about social/peer learning 	Sense-making	Temporal Context
<ul style="list-style-type: none"> – Adaption of financial practices for new financial technologies – Aversion to change 	Technology	

5.7.1 Summary

There appears to be a conflict between evolution of financial literacy practices due to technology and infrastructure (e.g. ePM, online banking, phone and card payments) and the influence of tradition (e.g. farmer routine, importance of the past) which leads to many farmers being averse to change and the adoption of new financial literacy practices being slower in some cases. From the farmers studied, there appears to be many different ways to achieve the same goal (i.e. making sense of the financial performance of the farm and to inform decision making) and the focus on a standardisation of financial literacy can result in more harm being done than good as individuals (in this context the farmers) can be frustrated when dominant financial literacies are pushed onto them that they do not understand whereas their approach to their farm finances may be sufficient for their needs. The interaction of informal, formal, and social learning is an important dynamic to understand when examining changing farmer financial literacy practices and different farmers appear to engage differently with each avenue. While some of the case farmers are actively looking for formal learning opportunities, others prefer the dynamic of informal discussions with their advisor and the social environment of farmer discussion groups to learn new things.

The codes found across the cases that captured how this dimension is manifested are organised into two themes: (1) the farmers' ability to make sense of the financial performance and position of the farm in a way that is sufficient for them; and (2) the impact of technology on the changing financial literacy practices on the farms. The first theme relates to the sense-making abilities of the farmers studied. Three of the farmers in the cases studied (F2, F3, F4) had no formal second level education and none of the farmers had any targeted financial education in terms of running a business or reading financial statements. However, through a mix of social learning through discussion groups, formal learning through advisor meetings and informal learning through family members and ad-hoc discussions with advisors, the farmers manage to evolve an approach to financial literacy that is sufficient to their needs and which is adapted as required. The second theme focuses on the role of technology on the changing financial literacy practices observed on the farms. Apart from the inflection points in the farm's lifecycle, the main driver of change in farm financial literacy practices on the farms studied was from technological change. The role of online banking and the change from cheque books to card payments are two examples of the role technology is having on changing farmer financial literacy practices. While the increasing role of technology and online functionality is being embraced by some of the farmers allowing them to more easily track overdraft balances

and loan repayment dates online, other farmers remain unconvinced around issues of privacy, confidence in using the computer (and relying on family members to do it for them), and a desire to continue the tradition of the chequebook and paper based bank statements.

Table 5.13 below outlines the updated proposition from this dimension in the context of micro and small cattle rearing enterprises.

Table 5.13: Dimension 6 – Propositional Statements

Dimension	Propositions
Temporal Context	<p>P6a: <i>Financial literacy practices in micro and small cattle rearing enterprises change as farmers use different learning environments to make sense of new financial situations</i></p> <p>P6b: <i>Financial literacy practices in micro and small cattle rearing enterprises reflect the tension posed by the adoption of new technology</i></p>

5.8 Refined Framework Propositions

Based on the findings of the cross-case analysis outlined in this chapter, this study has refined the propositions from the initial financial literacy as a social practice to the context of micro and small cattle rearing enterprises. These updated propositions should provide a useful basis for future empirical research in this area. Table 5.14 provides an overall summary of these updated propositions.

Table 5.14: Farm Financial Literacy Propositional Statements

Dimensions	Propositions
Social Practice	<p>P1a: <i>Financial literacy in micro and small cattle rearing enterprises is a social practice that is embodied in the routine of the farmer and is shaped by the temporal nature of farming</i></p> <p>P1b: <i>Financial literacy in micro and small cattle rearing enterprises is determined by the role of the farmer in the production of the farm accounts and the roles assigned to other members of the farming household and external parties</i></p> <p>P1c: <i>Financial literacy in micro and small cattle rearing enterprises is influenced by the physical place where financial literacy events take place and how financial texts are stored</i></p>
Concurrent Literacies	<p>P2a: <i>Financial literacy in micro and small cattle rearing enterprises competes with other farm related literacies (including grass management and animal husbandry) for the farmer's time and attention</i></p> <p>P2b: <i>IT literacy and formal education attainment complement financial literacy in micro and small cattle rearing enterprises</i></p>
Institutional Influence	<p>P3: <i>Financial literacy practices in micro and small cattle rearing enterprises are shaped by the financial information demands and timelines of financial</i></p>

	<i>stakeholders and the power these stakeholders have in their relationship with the farm</i>
Socio-cultural Context	<p>P4a: <i>Financial literacy practices in micro and small cattle rearing enterprises reflect the personal objectives of the farmer</i></p> <p>P4b: <i>Financial literacy practices in micro and small cattle rearing enterprises are shaped by the importance of privacy, ties to the land and the broader cultural practices of farming</i></p>
Historical Context	P5: <i>Financial literacy in micro and small cattle rearing enterprises is shaped by the cumulative financial experiences of the farmer and the role of tradition passed down from previous generations</i>
Temporal Context	<p>P6a: <i>Financial literacy practices in micro and small cattle rearing enterprises change as farmers use different learning environments to make sense of new financial situations</i></p> <p>P6b: <i>Financial literacy practices in micro and small cattle rearing enterprises reflect the tension posed by the adoption of new technology</i></p>

5.9 Chapter Summary

Chapter 5 addresses the research question from a cross-case analysis approach. The approach focuses on each of the six dimensions of the financial literacy as a social practice framework and the chapter provides an overview of the key themes that emerged in each proposition from the case studies. Updated propositions were developed to further refine them based on the case study evidence and provide a basis for future empirical research. This chapter provides support to the view of financial literacy as a social practice and a number of salient themes emerged from the cross-case analysis including the influence of temporality, the roles people play in financial literacy events, and how financial literacy is historically situated. These salient themes will be discussed in more detail in the next chapter. Chapter 6 will provide conclusions summarising the overall contributions of the thesis.

Chapter 6 Conclusion

6.1 Introduction

The previous two chapters of this thesis provided a detailed analysis of the case studies from both a within-case (Chapter 4) and cross-case (Chapter 5) perspective. This analysis was anchored on the study's primary research question – *how does financial literacy manifest itself in farming enterprises?* – and the research framework discussed in Chapter 2 of viewing financial literacy in farming enterprises as a social practice. This chapter begins with Section 6.2 which provides an overview of the key contributions of this study. Section 6.3 discusses the limitations of the study, while Section 6.4 presents the avenues for further research. Finally, a conclusion to the thesis is presented in Section 6.5.

6.2 Contribution

This study provides a number of significant contributions to the existing financial literacy and farm management literature which are discussed under the five domains of theory, empirical evidence, methodology, context and practice. Table 6.3 provides an overall summary of the contributions of this study.

6.2.1 Theoretical Contributions

Financial Literacy as a Social Practice

Firstly, this study presents a new theoretical approach to examine the phenomenon of financial literacy. Initially introduced by Bay et al. (2014), this paper develops the financial literacy as a social practice paradigm further by showing how Barton and Hamilton's (1998) six propositions can be extended to the domain of financial literacy. Financial literacy research has been rooted in a positivist tradition of viewing financial literacy as a form of investment in human capital (Lusardi & Mitchell 2014). This paradigm has resulted in a dominance of quantitative research looking at the measurement of financial literacy in populations and examining its impact on financial decision making and financial outcomes. While significant progress has been made in a short space of time (see Chapter 1), there remains outstanding issues that are not fully accounted for by the current theoretical framework including the mixed

findings about the impact of financial education on financial decision making and understanding the reasons for heterogeneity in financial literacy across different demographics (Lusardi & Mitchell 2014; Bottazzi and Lusardi 2020). Adding to the theoretical and methodological diversity of what is still a young and developing body of literature should help to contribute to a better understanding of financial literacy and, in particular, the social and cultural aspects of the phenomenon which have heretofore been under researched.

While the skills and practice views of financial literacy may appear to be mutually exclusive, they can in fact complement each other and provide an emphasis on the different aspects of financial literacy (Papen 2005). The technical side of financial literacy alone is too narrow to fully understand this complex phenomenon as these technical skills (or lack thereof) are always situated in a particular social and cultural context that needs to be appreciated to understand an individual's financial behaviour.

“While the skills view highlights the technical and psychological side of literacy, the practices view draws attention to the social and cultural side of it”

Papen (2005, p.34)

This perspective of financial literacy as a social practice provides a powerful theoretical foundation to explore the phenomenon in context and to focus on the social and cultural influences, not just on an individual's cognitive ability (Gee 2015). A significant contribution of this study is providing a detailed theoretical framework for the analysis of financial literacy in micro and small enterprises. This thesis has demonstrated clearly that financial literacy is not embodied in one person and thus cannot be examined solely using a skills based approach. By making connections between empirical data and social theory, we can develop a richer and more comprehensive understanding of individuals' financial behaviour and how it is situated in particular times and places.

Temporality

Secondly, this study brings temporality to the forefront of financial literacy studies. Time is an important variable in the analysis of society (Maines et al. 1983; Adam 1990). Until now, the temporal dimension of financial literacy has been neglected resulting in static analyses being undertaken with little attention paid to the temporal influences of the past and future on current financial literacy practices. Temporality has an important role in how we conceptualise

financial practices and behaviours (Riach et al. 2017). In order to understand why people make particular financial decisions or engage in particular financial literacy practices that perhaps on the surface seem implausible or uninformed, it is important to examine the interactions about finance that people encounter in and across time from a variety of actors and social practices (Riach et al. 2017). In particular, in the case of farms, different temporalities may exist simultaneously and farmers have to straddle these different temporalities and attempt to reconcile the conflicting demands of each (Lockie 2006). As noted by Gill (2013), the cyclical nature of the farming season with its focus on repetition and tradition contrasts with the more modern concept of temporality whereby the passage through time represents progress rather than repetition (Latour 1993). Working capital management is one of the founding principles of financial management in enterprises and it is fundamentally a temporal concept which advocates the speeding up of cash collections on the one hand whilst slowing down cash payments (Enqvist et al. 2014). However, temporality has a much more fundamental impact on farming enterprises and this can explain why farmers often act counter intuitively with respect to working capital management and suggests the need to extend research of working capital management to reflect social, cultural and institutional factors. In this study, the importance of the past in terms of tradition, inheritance of financial literacy practices from previous generations and the farmer's own previous financial experiences (Proposition 5), combine with considerations for the future around the farm's financial viability and the next generation to influence current financial literacy practices (P6a). Furthermore, other temporalities such as financial stakeholders' (e.g. banks, advisors, DAFM, Revenue) timelines (P3) and the temporal demands of family and off-farm life all play a role in the current financial literacy practices on the case farms (P4a). Thus one of the foremost theoretical contributions of this research is to establish a temporal lens to explore financial literacy and the impact that the past and the future has on current financial literacy practices.

Identity and Role

Thirdly, this research also enriches the theoretical lens which researchers can examine financial literacy by bringing a focus on the importance of identity and roles. This study is consistent with the emerging support for using identity theory (or more specifically identity control framework by Burke (2007)) to examine how farmers' various identities influence their role in agriculture. In this study, where a farmer's identity is not strongly associated with the

financial/business aspects of the farm, but rather with the physical and practical farming activities (e.g. grassland management, animal husbandry), there is a lack of importance and time devoted to financial literacy practices (P4a), which is consistent with earlier studies (Burton et al. 2008; Hilkens et al. 2018). In the broader context of financial literacy, these findings suggest that an appreciation of the personal identity of the individual and how they perceive the financial world and their role in it can provide a better understanding of their financial literacy practices and behaviour. A related theoretical dimension to this is that when farmers do not identify the financial aspects of a farm to be central to their identity, they can delegate much of these responsibilities to either other family members (e.g. spouse, son/daughter) or to external parties (e.g. bookkeeper, accountant) (P1b). As evidenced in the cases in this study, spouses and sons/daughters can play an important supporting – and sometimes primary – role in the financial literacy events on the farm which is consistent with Jackson-Smith et al. (2004) who find that spouses (mainly women) play a crucial role in collecting and maintaining farm records. This study highlights the insight that can be obtained from a focus on the roles played both within and outside the farm family and how these influence the financial literacy practices on the farm.

Power

A final theoretical contribution of this study is to highlight the role of power in understanding financial literacy. Drawing on literacy as a social practice literature (Papen, 2005), this study puts a focus on the power relationships that exist between each farm and various stakeholders in the farm financial ecosystem which influence the financial literacy practices (P3). Power can be located in the financial texts that are used (e.g. in the language used, its format, who it is addressed to) and also in the way they are used and the role they take on in specific situations (Papen 2005). In this study, there is evidence of hard power - in the sense of legal or contractual requirements to produce certain financial information - in the farmers' relationships with their bank (Hilkens et al., 2018) and the Revenue authorities. There is also evidence of soft power – in the sense of peer or advisor pressure to improve financial practices – coming from a farmer's own network (e.g. discussion group) or Teagasc advisor (P6a). This focus on power also provides an insight into the dominant and local (or vernacular) financial literacy practices that emerge on farms. Certain financial literacy texts (e.g. Teagasc ePM, annual farm tax accounts) and associated practices would be seen as dominant financial literacies as they are driven by various stakeholders (e.g. banks, Revenue, Teagasc, DAFM) in the farm financial ecosystem

and failure to master them can result in penalties for the farmer (e.g. breach of loan agreement, tax penalties) and disempowerment. However, this study also identified numerous instances of more local financial literacy practices that the farmers undertake themselves when engaging with financial texts on the farm. These local financial literacies are different from the institutionalised financial literacy practices and in most instances do not use the formal financial terminology that you would see in a traditional set of financial statements. This dichotomy between dominant and vernacular financial literacies closely relates to the use of emic and etic accounts in entrepreneurship research (e.g. Mumby-Croft and Brown 2006). The case study approach undertaken in this study provided the opportunity for the researcher to immerse himself in the farms over the period of a year which highlighted the importance of gaining the emic or ‘insider’ perspective of what financial literacy means to each farmer. An appreciation of the farmers’ emic narrative compliments the traditional ‘etic’ or outsider approach which tends to dominate studies in this domain and emphasises the complex, and often contested, nature of financial literacy when viewed from these different perspectives. Thus the consideration of the influence of power on financial literacy and the distinction between dominant and local financial literacies are key theoretical contributions from this study.

6.2.2 Empirical Contributions

This study answers calls for more qualitative research examining the phenomenon of financial literacy in different social settings (Bay et al. 2014) and demonstrates that Barton and Hamilton’s (1998) literacy as a social practice framework is useful in examining a financial domain. While this framework has previously been employed in other applied literacy contexts (Papen 2009; Bhatt 2012; Papen 2013; Samerski 2019), it is the first detailed application to the area of financial literacy. The key empirical contribution of this study is to establish an empirical framework of financial literacy by outlining a set of codes and associated themes from the farming enterprises studied. Table 6.1 provides an overview of this framework. This framework is exploratory in nature and thus provides an initial attempt at developing an empirical framework by which to examine financial literacy in a particular social setting. The above findings are captured in refined propositions which were generated to stimulate the development of propositions for future empirical testing. A summary of these propositions are included in Table 5.14.

Table 6.1: Summary of Codes and Themes for Financial Literacy as a Social Practice

Codes	Themes	Dimensions
<ul style="list-style-type: none"> – Presence of a routine/process for the farm finances – Influence of farming season on financial literacy practices – Temporal importance attached to financial literacy practices 	Temporality – Farming/Farmer	Social Practice
<ul style="list-style-type: none"> – Statements about different roles within the household – Delegating/Outsourcing of farm financial practices – Examples of family support for farm financial tasks 	Role Assignment	
<ul style="list-style-type: none"> – Statements about the location of financial literacy events – References to the location of where financial literacy texts/records are kept 	Place	
<ul style="list-style-type: none"> – Balancing of physical farm work and administration work – Expressions of farm administration as a burden – Delegation of perceived non-core tasks 	Domains of Farm Work	Concurrent Literacies
<ul style="list-style-type: none"> – Statements about confidence in using IT – Desire to use more IT to improve financial practices – Influence of formal education levels 	Complimentary Literacies	
<ul style="list-style-type: none"> – Compliance with institutional timelines – Making financial decisions to meet institutional timelines 	Temporality - Institutional	Institutional Influence
<ul style="list-style-type: none"> – Stakeholder demands for financial information – Influence of financial stakeholders on farm financial decisions 	Stakeholder Power	
<ul style="list-style-type: none"> – Dominance of formal financial outputs – Examples of informal farmer financial analysis/rules of thumb 	Dominant vs Vernacular Financial Literacies	

<ul style="list-style-type: none"> – Sufficiency of financial literacy practices – Detachment from formal financial statement 		
<ul style="list-style-type: none"> – Presence of financial pressure on the farm – Farmer’s view of role/purpose of farming – Statements about next generation on the farm (succession) 	Farmer Focus	Socio-cultural Context
<ul style="list-style-type: none"> – Privacy of financial discussions relating to the farm – Non-economic rationale for financial decision making – Expressions of cultural scripts 	Farming Culture	
<ul style="list-style-type: none"> – Indications of loyalty/aversion to change – Inheritance of financial practices 	Tradition	Historical Context
<ul style="list-style-type: none"> – Importance of the past – Financial situation when farm taken over – Influence of past financial experience 	Experience	
<ul style="list-style-type: none"> – Examples of informal learning – Learning by doing/experience – Statements about social/peer learning 	Sense-making	Temporal Context
<ul style="list-style-type: none"> – Adaption of financial practices for new financial technologies – Aversion to change 	Technology	

From this overall structure of financial literacy, four pertinent empirical findings emerged in this study; the overall financial literacy practices in micro and small cattle rearing enterprises, temporality, institutional influence, and the role of the farmer.

Financial Literacy Practices/Routines

Empirically, this study presents a comprehensive visual and written record of the financial literacy practices in micro and small cattle rearing enterprises in Ireland in 2018/2019. This is a unique time in these enterprises as farmers transition from paper-based accounting practices towards an ever increasing digital financial environment. The existing financial literacy practices on the farms are evidenced in the collating of paper documents such as cheque book stubs, receipts and the manual storing of these files using folders, trays and, in one case, a biscuit tin. The financial activities that are undertaken are dominated by a pen and paper approach and in the main are located at the kitchen table and reflect practices that often involve other members of the farm household and routines that are passed from one generation to the next. These farming enterprises are at the intersection of the conflict between traditional (e.g. pen and paper, importance of social interaction) and modern financial literacy practices (e.g. use of technology, focus on efficiency and automation) providing a unique insight into the complex dynamics of financial literacy in micro and small enterprises and how it is influenced by a variety of internal and external factors. The example of the transition to online banking and the centralisation of most banking operations illustrates clearly the conflict that can arise between the importance of tradition and routine that farmers attach to their financial practices (e.g. going in to meet the bank manager to organise a farm loan or to the bank counter to lodge a cheque) and the move for most banks towards automated lodgements and centralised loan applications through head office. Furthermore, this study provides evidence of the interesting contrast between the adoption of technology in other areas of the farm (e.g. grass measurement, calving cameras, animal medicine recording apps) and the traditional pen and paper approach that still remains dominant today for the financial aspects of the business. Tradition appears to be more strongly associated with the financial practices on the farm but this can also be partly explained due to the absence of suitable and farmer-friendly financial technology which was also noted in our key stakeholder focus group as a key limiting factor in Ireland. Thus a key empirical contribution of this study is to capture in detail the complexity of how financial literacy manifests itself in micro and small cattle rearing enterprises.

Temporality

Secondly, temporality appears to have a significant influence in how financial literacy manifests itself in the farms studied. The financial literacy practices of the farmers are centred

around their management of time across the farming season. The nature of temporality, and the importance of time, has been rarely analysed in the sociological literature relating to farming to date (Gill 2013) and this represents a significant empirical contribution with respect to farm financial literacy practices. The farmers were constantly balancing their time between various tasks on the farm at different times of the year. In two of the cases studied (F2, F5), this temporal pressure led the farmers to seek to outsource particular financial literacy tasks to other family members or third parties (e.g. an accountancy firm) to allow them to focus on other tasks on the farm. The routine each farmer has with respect to financial literacy on the farm is another important dimension as all the farmers have particular times of the day and times of the year that they focus on financial literacy events on their farms. The annual financial cycle on the farm with its repetitive milestones (e.g. financial year end, tax deadlines, loan repayment dates) reinforces this focus on a financial routine and with each year the farmers' financial literacy practices become more embedded. The influence of time is also evident in the overall approach each farmer takes to the financial aspects of the farm's management. Consistent with Vanclay (2004) and Burton (2004), the identity the farmer builds for themselves of what they believe a good farmer to be and how they view the purpose of farming influences the timing of the financial literacy practices on the farm. Those farmers that view the farm as a business that must generate a return and are actively engaged in reviewing the financial performance of the farm will undertake this process as soon as possible after the year end, with some even doing it before the year end to plan ahead – thus seeing the timing of financial literacy events on the farm from a strategic management perspective. In contrast, those farmers who do not view the farm as a business and have less focus on the financial performance of the farm take a more compliance perspective to the timing of these financial literacy events and only focus on it when it needs to be done in advance of the following October's tax deadline.

Institutional Influence

A third key empirical finding is the institutional influence on financial literacy practices at a farm level. Institutions within the farm financial ecosystem appear to have a significant influence on temporality on the farms with respect to financial literacy practices, which is related to the first empirical finding discussed previously. Key deadlines set at an institutional level (e.g. discussion groups, DAFM scheme payments, tax deadlines, bank deadlines) create further temporal pressure on the farmers which drives much of their approach to financial

literacy and the timing of financial literacy events. Furthermore, the interaction of these temporal forces at both a farm level and an institutional level can result in conflict with the farmer being forced to adapt their farm practices to align both. For example, in two of the cases studied (F1, F5), the farmers had to sell stock at times of the year when they did not want to (due to lower prices) to meet loan repayment schedules set by the bank. Institutional influence is also apparent in the nature and form of financial information prepared and used at a farm level. The role of institutional influence appears to push formal financial literacy onto the farmers based on the variety of requirements made. This is consistent with the findings of Hilkens et al. (2018) who find the bank has significant authority in the relationship between it and the farmer leading to certain requirements (e.g. to provide budgets or farm accounts) being put on the farmer. These institutional requirements for financial information from farms (e.g. annual tax accounts, Teagasc ePM, DAFM scheme requirements, bank requirements for loans) appear to reinforce the use of dominant financial literacies such as formal annual farm accounts and the Teagasc ePM. The finding of institutional support of dominant financial literacies is consistent with studies in other applied areas of literacy such as health literacy (Papen 2009) and digital literacy (Bhatt 2012) where hierarchical social relationships and power imbalances can result in particular types and forms of literacy practices (in this case, in healthcare and university settings) being mandated despite these not being familiar to the participants in the study. This institutional focus on dominant financial literacies contrasts with the farm level approach observed in this study whereby the farmers undertook more informal financial analysis and rules of thumb to understand the farm's performance and financial position. This dissonance between farmers and institutions in terms of the lack of focus farmers put on formal financial outputs (such as financial statements and budgets) in measuring a farm's performance or to support decision-making is consistent with earlier studies (Burton et al. 2008; Halabi et al. 2010; Halabi and Carroll 2015; Jakobsen 2017; Hilkens et al. 2018). Furthermore, as noted by Hilkens et al. (2018), the mismatch was underpinned by institutions, including farm advisors, having a normative model of farmers' financial behaviour which did not match with farmers' actual financial practices and focus on the financial side of the farm business. These farmers were left frustrated by the focus on formal financial outputs when interacting with various institutions and they felt disconnected between what these outputs were saying and what the farmer's own view of the farm's financial performance was. The imbalance of power in the relationship between the farmer and the various institutions limited these farmers' choices except to adapt to the institutional requirements even if these are not being used by the farmer on a day to day basis.

Farmer Influence

A final key empirical finding is that the role of the farmer themselves has a key influence in the financial literacy practices undertaken on the farm and how it manifests itself. The factors that motivate farmers' decisions and behaviour, spanning economic, social and cultural factors (Vanclay 2004; Burton 2004) are widely debated in the literature and this study adds to this debate in a financial literacy context. In particular, the value and importance that each farmer perceives coming from the financial aspects of the farm and how they view the role of farming are two key areas of influence on the financial literacy practices on the farm. Farmers in this study that view farming as a way of life and a vocation with little focus on the financial performance of the farm tend to outsource the majority of the financial work on the farm to other family members (e.g. child or spouse) or an accountant which can result in a further disconnect between the farmer and the underlying financial performance of the farm. This finding of financial management not being central to a farmer's identity compared to more technical farming activities, reflects findings from earlier studies (Burton et al. 2008; Jakobsen 2017; Hilkens et al. 2018). The impact of social and cultural factors has parallels with socioemotional wealth (SEW) theory from family business literature. SEW theory draws on behavioural agency theory, to explain why family owners undertake business decisions contrary to the axiom of profit maximisation to preserve their 'affective endowments' such as organisational identity (Gómez-Mejía et al., 2007; Gomez-Mejia et al., 2011). Since the owners are the stakeholders in family business, they can choose to focus on socioemotional returns over economic gain (Cennamo et al., 2012). In contrast, those farmers who viewed the farm as a business that needed to generate a return financially and who placed significant importance on the financial side of the business, actively engaged with the timing and nature of financial literacy practices. In this study this perceived value of the financial performance of the farm and the farmer's view of the purpose of farming appears to be heavily influenced by the farm family structure (e.g. dependent family, household reliant on the farm), the existence of a clear successor, and the level of farm debt which increases the financial pressure on the farm.

6.2.3 Methodology

In providing an alternative theoretical approach to financial literacy, this study also introduces a new methodology to explore financial literacy in context. The dominance in the extant financial literacy literature of quantitative studies focused on measuring financial literacy levels at a point in time provides a limited insight into how financial literacy is situated within

particular contexts. Narrative methods researching financial literacy in context and examining this phenomenon from a temporal perspective have not been developed in the literature to date and this is a key methodological contribution of this study. This study draws on the literacy as a social practice literature (Barton and Hamilton 1998) to utilise the concepts of *financial literacy events* and *financial literacy practices* as units of analysis to explore financial literacy in particular contexts. Financial literacy events and associated practices provide a new powerful way of conceptualising the links between the activities of interacting with financial information and the social structures in which they are embedded (Barton and Hamilton 1998). The inclusion of photographic evidence, captured as part of the farm visits to complement the primary farmer interviews, help to emphasise the traditional paper-based nature of the financial literacy practices on the farms. Furthermore, because the majority of longitudinal case based data is presented and constructed in retrospect, the recording of the process as it occurred and presenting it in this study, makes a contribution by being ‘truly’ longitudinal (Van de Ven and Engleman 2004).

Placing social and cultural factors at the core of financial literacy through the use of multiple case studies facilitates a dynamic exploration of how financial literacy changes in different social settings (Bay et al. 2014). The adoption of a qualitative research approach, specifically an abductive research strategy, has the scope to provide new insights in the area of financial literacy and to extend previous theories in related bodies of literature such as literacy studies, financial literacy and farm financial management. Case studies have also emerged as an increasingly popular methodological approach to capture the complexity and complex nature of farmer behaviour (Macken-Walsh et al. 2012; McDonald et al. 2014; McDonald & Macken-Walsh 2016).

6.2.4 Context

This study provides a novel context for the exploration of financial literacy – family farming enterprises. There are 137,100 family farms in Ireland, which represent 99.7% of all farm enterprises (CSO 2016). The financial vulnerability and reliance of a significant portion of farming households on other sources of income is of growing concern given the contribution the agri-food sector makes to the overall Irish economy. The future of Irish farming is at an important inflection point currently with challenges to the expansion of the dairy industry due to environmental concerns, a concern for rural Ireland associated with the decline of the

traditional cattle rearing and sheep farming systems, as well as the current negotiations regarding the reform of the Common Agricultural Policy across the EU. All of these factors present a challenging financial landscape for Irish farmers and provide an interesting and relevant context in which to explore financial literacy.

The context of this study is an important development and extension of the current studies in the financial literacy which are dominated by a focus on personal financial literacy at an individual level. The nature of farming as a social and cultural activity (Vanclay 2004; Burton 2004) coupled with the seasonal nature of the sector provides an important new context to explore heretofore neglected factors related to financial literacy including temporality, role assignment, and socio-cultural context. Furthermore, the nature of most family farming enterprises means that the farm finances are intrinsically linked to those of the farm household. This provides an interesting and important context at the intersection of personal and entrepreneurial financial literacy associated with the running of a business and it allows the researcher to explore how financial literacy manifests itself and interacts within both of these domains simultaneously.

6.2.5 Contribution to Practice

The study's findings also have important implications for farmers, educators, advisors and other key stakeholders in the farm financial ecosystem. By exploring how financial literacy manifests itself in farming enterprises, this study provides a detailed insight into this complex phenomenon which should be of benefit to a variety of practitioners.

Farm Financial Calendar

Firstly, the study provides the first farm financial calendar derived from farmers' financial literacy practices. As distinct from a normative approach of examining when farmers *should* be undertaking certain tasks, this study explores *what* is actually happening on farms, *when* it is happening, *who* is involved, *where* does it take place, and *why* it is happening this way. This depth of understanding of financial literacy practices on farms and how farmers engage with financial texts will allow advisors and educators to identify particular moments in the farming calendar when farmers' attention is focused on the financial aspects of the farm. These moments can then be used to target timely financial advice and financial education initiatives to maximise their impact to an engaged audience. This temporal focus on farmers' practices

has already been effectively applied in other areas of farm management including animal herd health and grassland management plans. Examples of these farm management calendars from Teagasc and the Irish Farmers Journal are included in Appendix B-1. Farmers are accustomed to the cyclical nature of the farming season and with particular tasks occurring at particular times of the year. The provision of a simple and practical calendar diagram which identifies some of these key moments can provide farmers and other practitioners a focus point to improve farmer financial literacy practices. It should be noted, as evidenced in this study, that a one size fits all approach to farm financial practices is not appropriate for the broader farmer population as different situations (e.g. farm income dependency, farmer's view of the purpose of farming, IT literacy) can influence financial literacy practices at a farm level. However, the farm financial calendar (Figure 6.1) and associated key stages (Table 6.2) provide a useful starting point for practitioners to understand the key areas of focus in farm financial practices.

Farmer Financial Education

Secondly, this thesis provides an insight into how financial education could be more effectively targeted at farmers (and more broadly) by examining financial literacy through a social practice lens. The traditional linear focus of financial education to improve a particular skillset which will then result in improved financial behaviour is overly simplistic given the findings in this study. Financial literacy is a much more complex phenomenon than a technical set of skills and it is always embedded in a particular social and cultural context. The social view of financial literacy seeks to overcome the traditional deficit view of financial literacy that shapes much of the current practice and policy debate by exploring how more local financial literacies and informally acquired knowledge can be included in financial education programmes. Education programmes need to be practice, rather than skill, driven with a focus on understanding why participants are engaging with the programme and what do they want to achieve. Furthermore, the success of group forums (e.g. discussion groups) and the informal and social learning environments these provide for participants must be balanced with the privacy and sensitivity that is associated with the financial aspects of farming which can limit the discussions relating to these topics in group situations (Hilkens et al. 2018).

Role of Financial Technologies

Finally, the dominance of a “pen and paper” based approach to the financial literacy practices across all the farms in this study contrasts with the increased use of technology in many other aspects of farm management to improve efficiencies (e.g. calving cameras, animal registration, animal medicine records, machinery GPS). A number of reasons for this were identified in this study including a sense of tradition with the physical financial records for the farm (e.g. chequebooks, receipts, bank statements), concerns about the privacy and security of financial technologies, and a satisfaction with the current approach to the farm’s finances. Notwithstanding this, even in the cases where farmers were open towards the use of IT to help reduce the time intensive task of financial recording keeping and analysis on the farm, the absence of farmer friendly software and the farmers’ confidence in their ability to use any new technology correctly is something that appears to be limiting the adoption of technology in the financial literacy practices of the farms. For practitioners, this highlights the importance of being able to identify those farmers that have a desire to adopt financial technologies and to focus on how they can adapt their offerings (in the case of banks, accountants, and software providers) and support (in the case of farm advisors, policy makers) to ensure that they are fit for purpose at a farm level.

The global pandemic, has accelerated the shift to automated and online banking which in turn has ‘pushed’ changes in farming literacy practice, in the two years since this study was completed. This study offers insights into how banks and government support agencies might tailor products to farmers and how training bodies might design more farm focused programmes to aid their transformation. On a more positive note, it offers insights to new entrants into the credit finance market to provide more tailored made products and services to this niche sector. There has been a marked expansion in provision of non-bank finance to MSEs since the financial crisis, however there has been limited targeting of the farming sector which still relies on tradition banking sector. A better understanding of the temporal aspects of farm financing will enable the provision of appropriate products.

Figure 6.1: Farm Financial Calendar - Overview

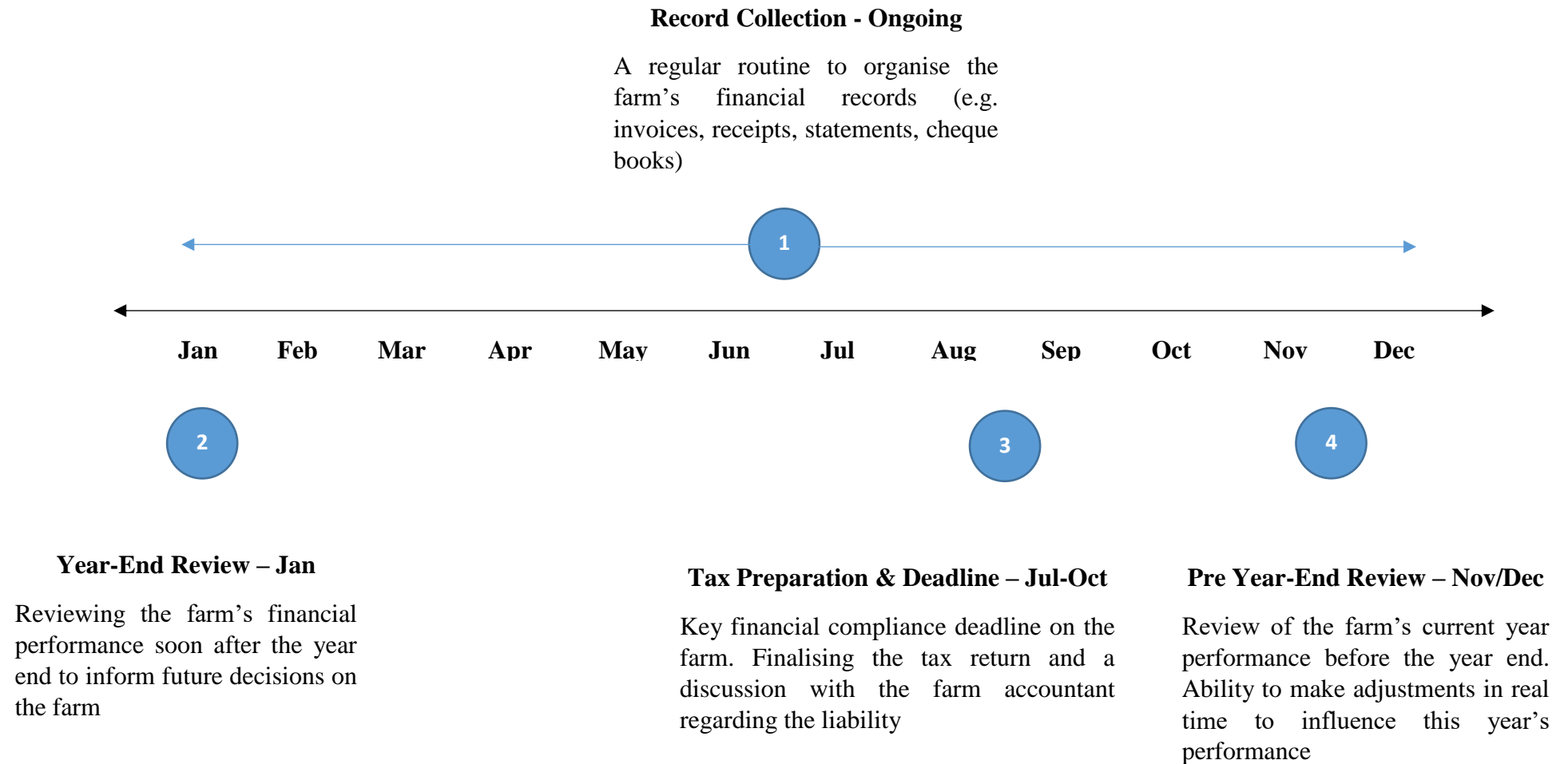


Table 6.2: Farm Financial Calendar – Practitioner Implications

Stage	Practitioner Implications
Record Collection	<ul style="list-style-type: none"> • Encourage each farmer to have a system – what works for them? • Tailor advice to the farmer’s own situation – e.g. pen and paper, formal folders, shoe box, use of a laptop • Be conscious of significant institutional influence (e.g. banks, Revenue, discussion groups) and compliance deadlines (e.g. VAT returns) • Provide sample templates for farmers to use - folder structures, organising plans, farm financial folder outline • Provide examples of farmers’ approaches during the year – different farmers with different approaches that work for them • Communicate the benefits of this – pre-year-end review, accurate tax planning, easier and quicker tax returns
Year-End Review	<ul style="list-style-type: none"> • Creating a culture of active farm financial performance review close to year end – target farmers who have the most to benefit • Emphasis on benefits of timely financial review and informing new farming year decisions • Provide easy templates to follow – feeding on from Stage 1 above which would be complete during the year • Target quieter new year period on farms and long, dark nights – a focus on book work before heavy spring work load
Tax Preparation and Deadline	<ul style="list-style-type: none"> • Emphasising to farmers the benefit of early awareness of their tax position and possibility to plan for this • Emphasis on more than calculating a tax bill – tax planning and farm financial planning – this can often be the farmers’ only interaction with the accountant all year
Pre Year-End Review	<ul style="list-style-type: none"> • Communicate the benefits of this – proactive decision making, active tax and financial planning • Provide easy templates to follow – feeding on from Stage 1 above and which could be easily populated towards the end of the year • Provide real examples of how farmers utilise this pre-year end meeting to inform decision making before the year end and its impact on the farm finances

Table 6.3: Contribution Table

	Supported	Developed	New
Theory	<p>Support for farming as social and cultural practice (Vanclay 2004; Burton 2004)</p> <p>Support for literacy as a social practice (Barton and Hamilton 1998)</p>	<p>Extension of literacy as a social practice to the domain of financial literacy</p> <p>Development of Barton and Hamilton's (1998) six propositions on literacy as a social practice for financial literacy in a farming context</p>	<p>New theorising regarding the role of temporality, role assignment, and power in understanding farmer's financial literacy practices</p>
Empirical	<p>Supports previous empirical research on the importance of social and cultural influences in farmer decision making and management practices</p>	<p>Examining the social and cultural factors that influence farmers' <i>financial</i> practices</p>	<p>Empirical framework of financial literacy as a social practice by outlining a set of codes and associated themes.</p> <p>Longitudinal case studies provide new empirical evidence of the importance of routine, temporal pressure, institutional influence, historical influence, and farmer preferences in understanding the financial literacy practices that farmers engage in</p>
Method	<p>Supports previous qualitative case study research in farms to understand farmer behaviour</p>	<p>Builds on previous research to examine farmer financial practices using qualitative case studies</p>	<p>New methodological approach to exploring financial literacy. Focus on qualitative case studies over a twelve-month period to capture temporality dimension. Previous research was quantitative and static.</p>
Context	<p>Supports previous studies examining financial literacy at an individual or household level</p>	<p>Exploration of financial literacy in an entrepreneurial context and how this interacts with personal financial literacy context (household and farm)</p>	<p>This study's context was on family farm enterprises which represents a new context for exploring financial literacy</p>
Knowledge of Practice	<p>Supports previous studies which have identified the importance of focusing on non-economic factors when trying to understand and influence farm management practices</p>	<p>Highlights the importance of context when understanding farmer's financial practices</p>	<p>Farm financial calendar derived from farmers' financial literacy practices</p> <p>Importance of a social practice driven, not solely skills driven, approach to farmer financial training</p>

Source: Format adapted from Farndale (2004)

6.3 Limitations

The key findings of this research should be understood in the context of the limitations of the study as discussed below. The novel and exploratory nature of this research has limitations but these also provide scope for future researchers to address in examining the phenomenon of financial literacy in a broader context.

This is the first comprehensive application of Barton and Hamilton's (1998) social theory of literacy to the domain of finance. For illustrative purposes, the framework is presented here in tabular form but it should not be viewed as fixed or bounded. Explicit in the literacy as social practice lens is the notion of contextual and temporal change/evolution. This study depicts the practices found in micro and small cattle rearing farming enterprises in Ireland at a unique point in time when both paper and online methods of preparing accounts were observed (P6a). Over the next number of years these farmers will operate in an increasingly digital financial environment and different financial literacy practices will be evident in future research.

Equally, the boundaries between the dimensions are not fixed. Temporality is a fundamental component of events and texts that shape the financial literacy practices in micro and small cattle rearing farming enterprises as identified in dimension one (P1a) but temporality also features in dimension three (P3a) in the context of the institutional and power relationships that govern farm-bank relations, as well as dimensions five (P5) and six (P6a and P6b) that specifically refer to temporality. Equally, the theme of dominant versus vernacular financial literacies is captured under dimension three (P3), which speaks to the impact of institutional factors and power relationships on farm financial literacy practices, but this theme could equally feature under dimension two which captures complimentary and competing literacies. In essence this demonstrates the strength and flexibility of the framework to different contexts. Nevertheless, as mentioned in chapter 1, the framework is more relevant to the examination of financial literacy in MSEs as opposed to medium-sized enterprises that are likely to have their own accounting department within the organisation.

Whilst acknowledging the strength of the framework, it is also important to point out the limitations of the multiple case study methodology upon which it is based. The nature of this methodology means that the findings cannot be generalised to the broader population of farmers or enterprises (Eisenhardt and Graebner 2007; Yin 2009). The case studies were all clients of Teagasc which was a deliberate strategy on the part of the researcher to obtain the level of access to study the research phenomenon in the depth required. Furthermore, all farms

were involved in the same farming sector, cattle rearing, which was deemed a necessary to minimise external variation beyond the phenomenon of interest (Eisenhardt 1989). Considering the dearth of empirical research in this area, future research could utilise the framework and associated hypotheses developed in this study to examine a wider empirical base contrasting Teagasc and non-Teagasc farm clients and different sectors of farming (e.g. dairy, sheep, tillage) which have different financial characteristics.

Secondly, case study research is also often criticised for the potential for bias from the researcher themselves during the relevant steps in the data collection and analysis processes (Yin 2009). To guard against this, a rigorous research methodology to ensure the validity of the research process. As outlined in Chapter 3, the triangulation of various sources of data was undertaken as well as a focus on key case study validity measures to minimise bias in the study.

Thirdly, the case studies chosen all come from a single country, Ireland. This limits the insight that may be available from exploring financial literacy as a social practice across different geographical regions. Given the noted regional differences in extant financial literacy literature to date (Lusardi and Mitchell 2014), this provides a focus for future research avenues to explore these geographical differences.

As already mentioned, financial literacy is of interest to a much broader population of micro and small enterprises as well as at an individual level (i.e. personal financial literacy) and the framework is well suited to applications in these settings in future research efforts.

6.4 Avenues for future research

Although there are a number of limitations to this research, as noted above, the novel and exploratory nature of the research question provides significant avenues for future research in the area of financial literacy.

Firstly, future research could also be aimed at a wider empirical base which could include different farming sectors (e.g. dairy, tillage, sheep), non-farming and non-family MSEs, as well as MSEs across different geographical contexts. These contextual extensions provide scope for a variety of comparative research and facilitate the generalisability of the results to a broader population of MSEs. Furthermore, the financial literacy as a social practice framework could equally be applicable at an individual level to explore personal financial literacy and complement growing level of quantitative research that is emerging in that body of literature.

Secondly, an additional avenue for future research could focus on the temporal aspect of financial literacy and extend the research timeline to more than a twelve-month period. Exploring how financial literacy manifests itself over the small enterprise financial lifecycle as depicted by Berger and Udell (1998) could provide additional insight into the fluid nature of financial literacy and how it emerges and evolves within enterprises.

Finally, another fruitful research path would be to examine how the insights about how financial literacy manifests itself using this theoretical framework can be used to influence financial behaviour through financial education initiatives. Exploring the design, delivery, and impact of financial education initiatives incorporating social practice principles could provide for an interesting comparison to current financial education initiatives.

In summary, financial literacy is a hugely important phenomenon at an individual, enterprise, and national level and the findings in this study should help stimulate a new theoretical and methodological discussion for the next stage of the literature's development.

6.5 Conclusion

Financial literacy has gained significant interest in the past decade with a substantial body of empirical evidence now developing across the topic. However, it is also a body of literature that is still in its infancy and theoretical diversification is something that can help to develop the area further. This is the primary aim of this study. By using a theoretical lens of financial literacy as a social practice, this study seeks to explore how financial literacy is always situated within a particular socio-cultural setting. This contrasts with the dominant tradition of viewing accounting and financial management as a technical static practice with limited consideration of the broader context in which the phenomenon is situated. The social practice paradigm provides an avenue to explore core issues at the heart of understanding financial literacy including when particular financial literacy practices occur, who is involved in these practices and what roles they play, and finally where do these events and associated practices take place. Using an in-depth and rigorous qualitative multiple case analysis, this study provides the first detailed application of a framework for understanding how financial literacy manifests itself as a social practice in farming enterprises.

The emergence of key themes such as temporality, role assignment, power relationships, and historical influence shed new light on the phenomenon of financial literacy and will help complement the findings in the literature to date. From this study, financial literacy appears to be not merely a technical ability that can be objectively measured and improved upon through formal financial education initiatives, but more of a social practice that is always contextualised and situated within a particular socio-cultural setting.

It was this study's aim to establish a deeper understanding of how financial literacy manifests itself in farming enterprises. This level of understanding required in depth field work and qualitative analysis to the extent that has not been seen before in the domain of financial literacy or farm financial management. This study provides additional empirical and theoretical insights to enhance these bodies of literature and to complement the work that has come before it. By exploring what financial literacy means at a granular level – to people, to households, to businesses, and to communities – it can help derive a better understanding of its significance and how to improve financial decision-making across various sectors of society. This study invites future researchers to continue this development.

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Appendices

Appendix A: Research Methodology

Appendix A-1. Sample Letter to Participants



John Nolan
*Farmer, Accountant
and Researcher*



[x] October 2017

Dear [Farmer Name],

We would like to invite you to participate in a **research project examining financial practices on farms**. You have been identified by [Advisor Name], your Teagasc advisor, as a potential participant for this research project.

Purpose of Project

Financial management is critical to the success of a farm. However, the financial practices of farmers are not well understood. As a farmer, accountant and researcher, I am undertaking this important research project as part of my PhD in collaboration with Teagasc. The purpose of this research project is to **further understand the financial practices of farmers**. A key objective of the study is to **inform future financial education initiatives to ensure these are more relevant and tailored** to particular types of farmers.

Project Involvement

The project will run for approximately **12 months with three farm visits during this period**. Each visit will consist of an hour long interview. On the first farm visit, I will collect some background information on the farm and the main financial events in your farming calendar. The subsequent visits will focus on understanding how financial decisions are made on the farm and who is involved. The visits will also involve a discussion of the financial performance and the financial records of the farm. It is important to note that if you do participate in this research your identification, information and views/opinions will remain **strictly confidential throughout the entire time and will not be disclosed at any point**.

Your Participation

Your participation in the project would provide an excellent opportunity to assess the financial practices undertaken on your farm as well as having a role in informing future financial education initiatives for farmers. In return for your involvement in the project, we will **extend you complimentary access to future financial education courses run by Teagasc** based on the outcomes of this research project.

If you have any questions in relation to this research project, please do not hesitate to contact us on the number/email provided below for further clarification. We will be in contact via phone in the coming weeks to confirm if you wish to participate in this research.

Thank you for your continued support and co-operation.

John Nolan
DCU Lecturer & PhD Student
086 8573192
john.nolan@dcu.ie

[Teagasc Contact]
[Title]
[Phone]
[Email]

Appendix A-2. Sample Letter to Teagasc Advisors



John Nolan
Farmer, Accountant
and Researcher



Financial Practices in Farming Enterprises

Advisor Information Sheet

Purpose of Project

Financial management is critical to the success of a farm. However, the financial practices of farmers are not well understood. The purpose of this research project is to **examine the financial practices undertaken on farms (e.g. cash budgeting, funding decisions, financial record keeping)**. In particular, we are focused on the economic and social influences on farm financial practices (e.g. proportion of household income from the farm, full-time vs part-time farmer, interaction with supports/discussion groups). A key objective of the study is to **inform future financial education initiatives to ensure these are more relevant and tailored to particular types of farmers.**

Case Study Criteria

Number of Farm Case Studies – **4-7 Farming Enterprises**

1. **Similar farming system** – Cattle rearing farms
2. **Diversity across key economic and social factors** – household reliance on farm income, single vs. dependent family, financially engaged vs non-financially engaged farmers

The target case study mix would include the following two groups of farms;

Main Household Income	Secondary Household Income
<ul style="list-style-type: none"> • 3 cattle rearing farms • Farm income is the main source of income in the household (i.e. <u>greater than 50%</u> of household income). 	<ul style="list-style-type: none"> • 3 cattle rearing farms • Farm income is not the main source of income in the household (i.e. <u>less than 50%</u> of household income).
<p style="text-align: center;">Each group above would include a mix of:</p> <ul style="list-style-type: none"> • Full-time or part-time farmer; • Single farmer or dependent family; • Financially engaged farmer (e.g. completes ePM & uses it, engages in financial discussions with advisor etc.) or non-financially engaged farmer (e.g. does not complete ePM, no financial based discussions with advisor etc.). 	

Commitment Involved from Farmer

Fieldwork Requirements – Each Farm Selected:

- **Brief questionnaire** to fill out before farm visit begins – background information etc
- **Three farm visits during a year** – these will evolve depending on case – possible monthly/bi-monthly call to discuss key financial events and update on farm during the period (e.g. changes to plans, financial decisions being made etc.)
 - Initial visit to understand context of farming enterprise, the farming financial calendar (e.g. what financial events occur on farm and when), and the general financial environment of the farm (e.g. formal office, how are records kept, who has the responsibility etc). Interview with farmer (& other relevant parties) for 1-2 hours.
 - Next visit will focus on one or two financial events (e.g. preparing ePM, annual accounts, annual budget) to focus on the financial practices around such events. Tailor to time of year.
 - The final visit will focus on the opportunity assessment in terms of financial education initiatives – what would they like to improve on and why, what format, experience of prior ones, incentives required etc.
- **Follow up questionnaire** to fill out after final farm visit

The primary contact will be with the farmer, however, where relevant, this may expand to additional people being interviewed (e.g. child, spouse etc. involved in financial events/practices) as the case evolves – only with the permission of the farmer.

The primary source of case evidence will be the interviews. However, additional case evidence collection in the form of photographs (e.g. of a farm office, record system, financial tools used), collection of artefacts (e.g. copy of financial analysis complete, forms filled out), or observation of a financial event may also be undertaken with the permission of the farmer.

Contact Information

John Nolan
DCU Business School
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086-8573192

[Teagasc Contact]
Teagasc
[Email]
[Phone]

Appendix A-3. Interview Protocol

Pre-Initial Farm Visit - December 2017

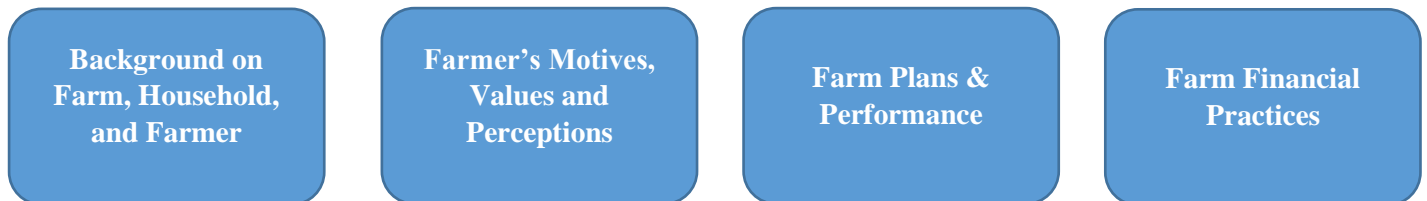
Researcher has a phone call with the relevant Teagasc farm advisor to understand case farm background and suitability (e.g. farm size, system, household, generational information, financial engagement)

This call will also provide useful for guidance as to other important issues that the farm visits will focus on (e.g. generational influence on farm, farmer's motives, involvement in discussion groups, financial engagement with advisor)

Confirm with advisor about the recording of interviews, access to financial performance information and taking of photographs, where relevant.

Send dates to Teagasc advisor and he/she organises 1st visit with farmer – Teagasc advisor to be present also for first visit.

First Farm Visit - January 2018



Housekeeping

- Introduction to researcher, PhD focus, and purpose of visit
- Plain language statement and informed consent form – advisor and farmer to sign
- Approach to interview (e.g. key areas, purpose), photos, records, and recording

Start Recording

Topic 1 - Background on Farm, Household, and Farmer

Q1.1 - Can you tell me about your farm and the farming system you operate?

The answer should cover, if relevant, the following issues:

- Farm Size, Farm System, Farm Output, Changes in recent years?

Q1.2 - Can you tell me about your household in terms of size and their roles on and off the farm?

The answer should cover, if relevant, the following issues:

- Size of family, dependents, generational mix, involvement in farm, off-farm jobs

Q1.3 - Would you consider your household to be reliant on the farm for income?

The answer should cover, if relevant, the following issues:

- % of total household income (roughly)
- Primary or a secondary source of income?
- Financial pressure on farm to perform?
- Influence of household on key farm financial decisions?

Q1.4 - How did you get involved in farming initially and how has that developed to where you are today?

The answer should cover, if relevant, the following issues:

- Gradual or quickly
- What type of role
- Farming education
- Financial control of the farm

Topic 2 - Farmer's Values, Motives, and Perceptions

Q2.1 – What would you consider your motivation for farming or why do you farm?

The answer should cover, if relevant, the following issues:

- What would you see as your main goals for farming?
- Financial vs non-financial

Q2.2 – What do you think makes a “good” or “successful” farmer in today’s world?

The answer should cover, if relevant, the following issues:

- Take an example of a local farmer you consider to be a good/successful farmer - why does that farmer fall into that bracket?
- Take an example of a local farmer you consider to be a poor performing farmer - why does that farmer fall into that bracket?
- Focused on individual or the farm itself?

Topic 3 – Farm Performance and Plans

Q3.1 - Can you tell me about your plans for the farm for 2018?

The answer should cover, if relevant, the following issues:

- Any specific decisions/changes – tease out, financial implications etc?
- Plans further than 2018?
- Farm plans in place?
- What do you see the risks or the things that concern you about 2018 in terms of your farm plans?
- Targets or goals/objectives to hit – performance measures mentioned?

Q3.2 – What type of performance measures do you use on the farm to judge how you are getting on?

The answer should cover, if relevant, the following issues:

- How would you define a successful year on your farm?
- At the end of each year and also during each year?
- How was 2017 for your farm?

Topic 4 - Farm Financial Practices

Q4.1 – Can you tell me a bit about your current day to day routine on the farm (January)?

The answer should cover, if relevant, the following issues:

- How do you spend most of your time – animals, land & grassland management, farm management - e.g. a rough split and variety during the year
- Are there certain times of the year you focus on certain tasks (e.g. farm management)?
- Which tasks do you prefer/ not prefer?
- Do you/would you be happy to delegate certain tasks if you could?

Q4.2 – Can you tell me a bit about your approach to book work and record keeping on the farm?

The answer should cover, if relevant, the following issues:

- E.g. use of an office, structured vs ad hoc, keeping records/files
- What types of records are kept for breeding, animal health, farm jobs, grassland management? Examples of copy books, excel files, in head
- Compare this to records kept for financial management
- Are there any farm financial plans in place? How often? How far ahead would you look?
- Are there certain times of the year/week/day you focus on certain tasks (e.g. farm book work + financials)?

Q4.3 Can you give me an overview of how you keep track of the financial records of the farm?

The answer should cover, if relevant, the following issues:

- Books, biscuit tins, technology etc? Collect photographic evidence
- How do you track the performance of the farm from a financial perspective?
- Would you keep a separate bank account for the farm?
- How do you judge whether the farm is performing ok or not?
- Compare to records on other areas of farm management – animals, grass measurement etc.

Q4.4 – Can you tell me a bit about the main financial events on the farm each year? Use calendar as a guide.

The answer should cover, if relevant, the following issues:

- **Farm financial calendar activity.**
- Seasonality of cashflows – periods cash in and cash out – how does the farmer deal with this?
- How long would be spent on it – seasonal? Routine vs ad hoc? Big events vs regular
- Is there anything you have changed in terms of financial practices in recent years and why?
- Does the farmer use a calendar to plan other areas of farm management – animals, grassland management?

Q4.5 Who would be involved in the financial practices on the farm in terms of record keeping, financial decisions, and financial advice?

The answer should cover, if relevant, the following issues:

- Farmer, spouse, other family members, accountant, advisor, bank etc?

- Discussing financials with who – family, accountant, advisor – routine or to inform decisions?

Q4.6 Would you make use of an IT or other technologies to assist you with your farm financial practices?

The answer should cover, if relevant, the following issues:

- Online banking, cost control planner, computer, e profit monitor, excel, farm software, done deal?
- Use eProfit Monitor or not?
- How often would you use a computer?
- Role of family members and technology?

Second Farm Visit – Summer 2018



Housekeeping

- Reminder of project – three visits over course of 12 months
- Thank again for their time + chat about last six months (briefly as avoid duplication below)
- Approach to interview (e.g. key areas, purpose), photos, records, and recording

Start Recording

Topic 1 – Anchor Questions – Past Six Months, Fodder Crisis, Drought, Impact

Q1.1 Can you tell me a bit on how the past six months have gone on the farm since I was here last in January?

The answer should cover, if relevant, the following issues:

- Calving
- Fodder crisis – did it impact you? How much?
- Any changes to plans for this winter based on that experience?
- Financial implications – did you have conversations with merchant, bank, Teagasc advisor during that period? Look at ePM in more detail?
- Who, if any, did you go to for advice or support?

Q1.2 How is the current period of warm weather affecting the farm?

The answer should cover, if relevant, the following issues:

- Financial implications?
- Will this impact on your plans for the coming winter and into next year?
- Who, if any, did you go to for advice or support?

Q1.3 What have been your key takeaways from the past few months of farming?

The answer should cover, if relevant, the following issues:

- Positive/negative?
- Changes to plans?
- Reassess system?
- Financial implications?

Topic 2 - Farmer's Network

Q2.1 In terms of your own network of friends – would most of them be farmers also?

The answer should cover, if relevant, the following issues:

- Would you attend the mart or other farm related events (e.g. IFA, group meetings) regularly?
- Involved in roles outside of farming?
- Would farming be a topic of conversation in the household?
- Would you be confident/comfortable discussing farm financial issues with your network? Why/ why not?

Q2.2 Can you tell me a bit about the different advisors you would use for your farm?

The answer should cover, if relevant, the following issues;

- Accountant, vet, advisor, bank, Teagasc, other
- What topics would you discuss with each?
- How long have you been with each of them?

Q2.3 In terms of financial decisions and advice on the farm, who would be your first port of call for advice?

The answer should cover, if relevant, the following issues:

- Accountant, bank, family members, other farmers etc
- Consider the issue of trust
- Examples of any big financial decisions in recent years and tease out a bit – e.g. expansion, land purchase, sheds – farmer specific

Q2.4 In terms of dealing with your accountant, when would that meeting usually occur?

The answer should cover, if relevant, the following issues:

- Has it happened this year yet?
- Would they be contacted re fodder crisis, dealing with banks etc?

Q2.5 Do you participate in any farmer discussion groups?

The answer should cover, if relevant, the following issues:

- Previous experience of them – scheme led or voluntary – when did you start + why?
- How do you find the groups?
- Main topics – any financial discussions; opinion on same
- Would there be much discussion of financial performance/decisions of farms at these meetings? Why/why not do you think?

Topic 3 - Institutional Influence & Power Relationships

Q3.1 Are you part of any other DAFM schemes currently?

The answer should cover, if relevant, the following issues:

- How did you decide to enter X scheme?
- What is your opinion of those schemes? Did you find the schemes worthwhile?
- Have these schemes had any influences on your farming practices?
- Have they had any impact on financial practices or how you look at the farm from a financial perspective? E.g. KT scheme and farm improvement plan
- Previous experience of schemes – good and bad ones?

Q3.2 Where would you normally source all your farming related news, animal prices etc?

The answer should cover, if relevant, the following issues

- Newspapers, online, magazines, articles
- Online? Done deal, agriland etc
- How do you access market prices? Marts, ringing agents?
- How do you get quotes for fertiliser, meal, etc
- Would you ring around for quotes for factory and/or feed, fertiliser or stick to same contacts?

Q3.3 Which organisations would you follow for farming related advice?

The answer should cover, if relevant, the following issues:

- Which ones would you put most reliance on for farming information?
- Would you be looking out for guidance from these organisations in terms of fodder crisis, drought or at particular times of the year etc?

Q3.4 A broader question - if you think of all the players in the farming landscape from the banks, merchants, factories, the department etc. who do you think has the most influence on your farming?

The answer should cover, if relevant, the following issues:

- Tease out answer and influence in what way – how have you changed your farming?
- Has it always been like that or changed over time?

Topic 4 - Different Literacies and Different Domains

Q4.1 What would you consider the most important job(s) on the farm in terms of improving farm performance?

The answer should cover, if relevant, the following issues:

- What are your priority tasks?
- Adoption of new technologies for breeding (AI), animal health, grassland management in recent years
- Where have you put most of the focus in terms of improving the farm in recent years?
- Are some tasks vital that you would do yourself?
- What tasks do you/would you happily outsource on the farm if you could? e.g. Contractors

Q4.2 If you could improve on one area of your farming skill set, what would it be?

The answer should cover, if relevant, the following issues:

- Tease out why and what impact do you think it would have?
- Ask has the farmer done any courses or taken on any new skills in recent years?

Q4.3 Can you tell me a small bit about how you use technology on the farm?

The answer should cover, if relevant, the following issues:

- Does IT literacy impact on ability to manage the farm?
- What types of technology now being used on the farm – DAFM?, ICBF, etc
- Who does this on the farm?
- Registering calves, checking bank balance etc, online SFP application
- When did you start with this?

Third Farm Visit – January 2019

Anchor questions - day to day, performance to date, plans and any financial changes

Open Issues from First & Second Visit – Farm Specific

Generational
and Financial
Control

Micro
Financial
Practices –
Changes/Influences

Financial
Education

Future – Farm
& Farming

Housekeeping

- Reminder of project – three visits over course of 12 months + may have follow on chat/visit
- Thank again for their time + chat about last six months (briefly as avoid duplication below)
- Approach to interview (e.g. key areas, purpose), photos, records, and recording

Start Recording

Topic 1 – Anchor Questions – Past Six Months, Financial Changes

Q1.1 – Can you tell me a bit on how the past six months have gone on the farm since I was here last in the summer?

The answer should cover, if relevant, the following issues:

- Fodder position and autumn grazing – impact on financials
- Carrying more or less stock than last year?

Q1.2 – Financially how has the farm performed over the past six months?

The answer should cover, if relevant, the following issues:

- Any major changes, investments, new loans, loan repayments etc?

Topic 2 – Generational and Financial Control

Q2.1 – Can you tell me a bit about when you took over [or became involved in] running the farm?

The answer should cover, if relevant, the following issues:

- When he/she started farming
- When took over control of farm – when was it and how did it happen?
- When, how, what circumstances, gradual or sudden, operational vs financial control
- Can you remember taking over financial control? Same or different time; dealing with banks, managing cheques
- Did you find it hard to manage and how did you learn?

Q2.2 – Where did you learn your current practices for preparing the accounts, tax etc?

The answer should cover, if relevant, the following issues:

- Do you still undertake particular practices that would have always been undertaken on the farm? Tradition
- Have you changed anything in terms of farm management since you have taken over financial control
- What type of changes – practical tasks vs management tasks?
- How were the accounts prepared when you first took over?

Topic 3 – Micro Financial Practices

Q3.1 – Can you tell me a bit about how you structure your farm and household finances?

The answer should cover, if relevant, the following issues:

- Do you keep separate bank accounts for each?
- Are there any transfers between each?

Q3.2 Who would be in charge of household finances?

The answer should cover, if relevant, the following issues:

- Household bills, managing the account
- Allocation of roles or shared responsibility
- Contrast to farm situation and financial management

Q3.3 – What would be your preferred method of payment – cheques, cash, credit card, debit card, direct debit, online bank transfer – discuss each in turn.

The answer should cover, if relevant, the following issues:

- Tease out the reasoning and influences – habit and any changes?
- Who does the payments/lodgements if they are cheques?
- Role of cheque book stubs
- What is easier to track for end of year accounts?

Topic 4 – Farmer Financial Education

Q4.1 – How confident would you be in terms of the financial management of the farm? Are there any aspects that you would like to improve on?

The answer should cover, if relevant, the following issues:

- Particular aspects of financial management - budgeting, bank management, understanding accounts

Q4.2 Have you ever attended any course or meeting on farm financial management before?

The answer should cover, if relevant, the following issues:

- Value of the course and format
- Was there much focus on financial management in any agriculture courses you completed?
- Would such courses be of interest to you?

Q4.3 How did you develop the current financial practices on the farm?

The answer should cover, if relevant, the following issues:

- Inherit any practices from the previous generation about managing finances?
- Any changes due to accountant (e.g. IFAC), change in bank, change in farm system

Topic 5 – Future

Q5.1 – In terms of the future of your farm here, what would you like to see?

The answer should cover, if relevant, the following issues:

- Are you happy financially where the farm is at or what would you like to see in future?
- Different system, off-farm role etc
- Consideration of family situation and succession

Q5.2 How do you see the future of suckler farming?

The answer should cover, if relevant, the following issues:

- Is profit a key consideration?
- Would you change your current farm system? Why/why not?
- What would drive you to change?

Appendix A-4. Sample of N-Vivo Nodes

PhD New.nvp - NVivo 12 Pro

File Home Import Create Explore Share

Quick Access

- Data
- Codes
- Cases
- Notes
- Search
- Maps
- Output

Thematic Coding

Search Project

Name	Files	References	
Proposition 1 - Social Practice		15	158
Place		11	21
Role Assignment		9	34
Temporality Farming, Farmer		14	103
Proposition 2 - Different Literacies		12	41
Domains of Farm Work		9	24
Complimentary Literacies		8	17
Proposition 3 - Social Institutions Power Relationships		15	124
Temporality - Institutional		9	20
Stakeholder Power		15	50
Dominant vs Vernacular Financial Literacies		13	54
Proposition 4 - Purposeful and Embedded Goals		15	94
Farmer Focus		14	78
Farming Culture		9	16
Proposition 5 - Historically Situated		12	69
Tradition		8	14
Experience		10	55
Proposition 6 - Changes		15	70
Technology		12	37
Sense-Making		12	33

JN 58 Items

Quick Access

- Data
- Codes**
- Cases
- Notes
- Search
- Maps
- Output

Thematic Coding

Search Project

Name	Files	References	
Proposition 1 - Social Practice		15	158
Place		11	21
Location of FL Events		5	6
Location of Financial Records		9	15
Role Assignment		9	34
Household Roles		9	18
Family Support		5	8
Delegation of Financial Practices		6	8
Temporality Farming, Farmer		14	103
Temporal Importance		13	42
Routine or Process		13	35
Farming Season		10	26
Proposition 2 - Different Literacies		12	41
Domains of Farm Work		9	24
Physical vs Admin Work		6	11
Farm Admin Burden		4	8
Delegation Non-Core Tasks		2	5
Complimentary Literacies		8	17
Formal Education Influence		4	6
Desire to use IT		3	4
IT Confidence		7	7
Proposition 3 - Social Institutions Power Relationships		15	124

Appendix A-5. Sample of N-Vivo Transcripts Summary Report

Source Summary

Total Words in File	Total Paragraphs in File	Number of Nodes Coding File	Coded Percentage of File	Number of Text References	Number of Audio Video	Number of Image References
Document						
Files\F1\F1 1.1 5625	240	31	1.0000	135	0	0
Files\F1\F1 2.1 8839	855	30	1.0000	102	0	0
Files\F1\F1 3.1 6163	600	32	1.0000	102	0	0
Files\F4\F4 1.1 6256	665	40	1.0000	117	0	0
Files\F4\F4 2.1 5937	535	32	1.0000	81	0	0
Files\F4\F4 3.1 4229	255	28	1.0000	69	0	0
Files\F3\F3 1.1 11448	542	44	1.0000	185	0	0
Files\F3\F3 2.1 9972	319	29	1.0000	75	0	0
Files\F3\F3 3 1 9941	263	30	1.0000	111	0	0
Files\F5\F5 1.1 11968	1299	41	1.0000	144	0	0
Files\F5\F5 2.1 6988	908	23	1.0000	39	0	0
Files\F5\F5 3.1 3963	368	32	1.0000	81	0	0
Files\F2\F2 1.1 12334	880	39	1.0000	180	0	0
Files\F2\F2 2.1 14087	1196	35	1.0000	126	0	0
Files\F2\F2 3.1 6690	485	43	1.0000	120	0	0

Appendix A-6. Approval Letter from the Research Ethics Committee

Oifis na n-Idirdhealúcháin
Dublin City University



Mr John Nolan
Dr Teresa Hogan

Business School

19th April 2018

REC Reference: DCUREC/2018/050
Proposal Title: Financial Literacy In Farming Enterprises
Applicant(s): Mr John Nolan, Dr Teresa Hogan

Dear John,

This research proposal qualifies under our Notification Procedure, as a low risk social research project. Therefore, the DCU Research Ethics Committee approves this project.

Materials used to recruit participants should state that ethical approval for this project has been obtained from the Dublin City University Research Ethics Committee.

Should substantial modifications to the research protocol be required at a later stage, a further amendment submission should be made to the REC.

Yours sincerely,

A handwritten signature in blue ink that reads 'Dónal O'Gorman'.

Dr Dónal O'Gorman
Chairperson
DCU Research Ethics Committee



Teighde & Mailleocht Teicfecht
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Bóile Átha Cliath, Éire

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E research@dcu.ie
www.dcu.ie

Appendix A-7. Individual Consent Form



INDIVIDUAL INFORMED CONSENT FORM

Research Title: Study of Farm Financial Practices
Department: DCU Business School
Researcher: John Nolan
Tel (01) 700 6850 , email: john.nolan@dcu.ie
Supervisor: Dr Teresa Hogan, DCU Business School

Description:

The purpose of this research project is to examine the financial practices undertaken on farms. In particular, the researcher is focused on the economic, social, and cultural influences on farm financial practices. A key objective of the study is to inform future financial education initiatives to ensure these are more relevant and tailored to particular types of farmers.

Participant – please complete the following (Circle Yes or No for each question)

<i>I have read the Plain Language Statement (or had it read to me)</i>	<i>Yes/No</i>
<i>I understand the information provided</i>	<i>Yes/No</i>
<i>I have had an opportunity to ask questions and discuss this study</i>	<i>Yes/No</i>
<i>I have received satisfactory answers to all my questions</i>	<i>Yes/No</i>
<i>I am aware that my interviews will be audiotaped</i>	<i>Yes/No</i>

You are under no obligation to participate in this research. If you choose to participate, you may withdraw at any stage with absolutely no repercussions. All data collected will be fully confidential. Data from interviews will be used to write a case study and it will be provided to the participant for review. As under Irish law, data collected is subject to the Data Protection Act 1998.

I have read and understood the information in this form. My questions and concerns have been answered by the researchers, and I have a copy of this consent form. Therefore, I consent to take part in this research project.

Participant Signature: _____

Name in Block Capitals: _____

Witness: _____

Date: _____

Appendix A-8. Plain Language Statement



PLAIN LANGUAGE STATEMENT

Research Title: Study of Farm Financial Practices

Department: DCU Business School

Researcher: John Nolan
Tel (01) 700 6850 , email: john.nolan@dcu.ie

Supervisor: Dr Teresa Hogan, DCU Business School

Description:

The purpose of this research project is to examine the financial practices undertaken on farms.

The main objectives of the research are to:

- Understand the financial practices undertaken on farms through the activities and routines engaged in by farmers; and
- Explore the influences on these financial practices.

Details of what involvement in the Research Study will require

The research will require between 3-4 farm visits over a twelve-month period. Each visit will involve a two-hour interview with the farmer discussing various aspects of farm and financial management. If acceptable to the participant, the interviews will be audio-recorded for the sole purposes of analysis. Copies of the farm's financial performance reports (e.g. eProfit Monitor or similar) and photos of financial recording outputs (e.g. folders, books) and the farm office may also be used for the purposes of preparing the case study, if acceptable to the participant.

Potential risks to participants from involvement in the Research Study (if greater than that encountered in everyday life)

Participants are not exposed to any risk at any stage. The names of participants will not be published in any case study and will be kept anonymous.

Benefits (direct or indirect) to participants from involvement in the Research Study

- Opportunity to discuss the financial practices and financial management on the farm in a focused manner. This can provide the opportunity for strategic thinking about the financial practices on the farm and how they contribute to the overall farm performance.

- Preparation of a farm financial calendar to assess the current financial practices on the farm.
- Input into the development of new financial education courses for farmers.

Advice as to arrangements to be made to protect confidentiality of data, including that confidentiality of information provided is subject to legal limitations

All data collected will be fully confidential. A case study will be developed with the information of the interviews. The names of participants will not be published in any case study and will be kept anonymous.

Findings may be included as part of articles for submission to journals and conferences. As under Irish law, data collected is subject to the Data Protection Act 1998.

Advice as to whether or not data is to be destroyed after a minimum period

Data of the interviews will be kept in the form of case studies.

Statement that involvement in the Research Study is voluntary

You are under no obligation to participate in this research. If you choose to participate, you may withdraw at any stage with absolutely no repercussions.

If participants have concerns about this study and wish to contact an independent person, please contact:

The Secretary, Dublin City University Research Ethics Committee, c/o Research and Innovation Support, Dublin City University, Dublin 9. Tel 01-7008000, e-mail rec@dcu.ie

Appendix A-9. Farm Finance Stakeholder Focus Group

Location: Mullingar Park Hotel

Date: 18th January 2018

Participants:

- Barry Hyland – Agri Advisor, AIB Bank
- Bernard Harris – Department of Agriculture, Food & the Marine (DAFM)
- James McDonnell – Teagasc Farm Finance Specialist
- James Farrell – Partner, IFAC
- Kevin Connolly – Teagasc Farm Finance Specialist
- Mairead Kirk – Farm Advisor, Teagasc
- Phillip O'Connor – Head of Farm Support, IFAC
- Tom Rafter – Private Farm Finance Advisor & Founder of Farm Finance Solutions

Sample Evidence – Motivation for Research Question

Farmer Values, Identity and Motivation

You can be a farmer, or you can be a farmer-businessman and there's a different mindset there. Some people are just farmers because it's what they've always done, and others take a very business view to it.

I think that guy developed good habits, and something motivated him to get him started and then just became a habit and I think that's what really the poor financial guy needs, something to motivate them and get them started in financial management and then develop good habits.

I think the biggest thing in the suckler and that, is the thing of pride. Oh, my father and my grandfather done it. There might be better options for them but it's just a complete unwillingness to accept defeat really for a lot of the guys that aren't making money. And I think it's that cultural and social aspect of it is hugely involved in the financial decisions made on an awful lot of the suckler farms. So, it may not be economically viable but it's more so that it's ... A lot of the beef farmers, they're not based on economics. As you say it's because sure we've a lot of our employees in IFAC are beef farmers. Yeah, if some of them are viewing it as a hobby, that's fine. It's a cheap hobby, but if there's some of them that are relying on it and are still stuck in that, that's where you have a problem. I think the motivation thing is key. But if there's some of them that are relying on it and they're still stuck in that, that's where you have a problem.

I think the motivation thing just key, I think James is touching on it there, that, you know, leave your part time guys out for a minute, there are suckler farmers there and they have access to good technical advice from Teagasc and so on. And, you know, Teagasc could go in and say well listen, we do x, y and z or I can pretty much guarantee you we are going to increase your income by 50% over the next number of years. Now if any of us here was told that in our working day that we can make changes, x, y and z, and we're fairly confident that we're going to be taking home 50% more in two years time, we'd be bring it on, you know, we'd grab it. But that's, they're not, you know, and it's laid out for them there, there is no particular rocket science in it. And I think there's a different dynamic between maybe the part time guy and the fulltime guy, but there's fulltime guys there in enterprises, and particularly the suckler side, that could be making a lot more. But it seems that the last euro is not their main driver getting up in the morning and, you know, getting your head around that sometimes is difficult.

I think one of the biggest motivations that I've seen happen to get people to engage in this area is some big farm event, a succession where instead of one person farming, the family are relying on the farm, we now suddenly might have two farm families relying on the farm and they have to look and see what is the actual income capacity of this business that we're running. And they have to kind of then start looking at, or somebody starts looking at their repayment capacity in a bit of detail and then their eyes suddenly open, we didn't think now it was as bad as that, you know. We were paying all our bills but we find we have no, you know, how long are we farming and we can't bid for this bit of grounds that's beside us and we're never going to get this opportunity again. And suddenly they realise this is something we should be keeping a better track on. So I think that's another motivation that again this whole moving onto a course and encouraging people to engage in this, that could be built into that as well.

That motivation, it turns into a lack of motivation. Yeah, I think there is an issue there and I think maybe we mentioned it there earlier James about the return on investment from lime and phosphorous that we probably haven't sold necessarily the whole benefit of this increased financial awareness. There is a massive skills gap there, we're all on about it you know but we're on about a skills gap but farmers aren't looking for an education in this area. We can recognise the skills gap but there are farmers who are not pressing us for courses and information in this area.

Multiple Literacies

I've seen farmers in the past can bring beef cattle to shows and get first and second prizes and I know that they're not good in the financials. So, technically you could be very good, but it doesn't necessarily mean you're good financially. But if you're good at financial management, there's a closer alignment that you'll technically be good as well. I can see why that would be the case though, if you're good at financial management, that'll drive the technical side. But technical doesn't necessarily wouldn't drive the financial side, like.

If you look at farming compared with any other business, one of the biggest differences in most businesses, the manager is working on the business, not in the business. In farming, you're very, very much down in the parlour, milking the cows, when do they get the chance to take themselves out of that firing line to look at the bigger picture? They're expected to be stock manager, mechanic, accountant – where do they fit in? So we have to... whatever message we're trying to sell, we have to show them that this is going to be worthwhile spending the time and the money maybe in up-skilling themselves in this area, is going to make a huge difference. Compared to going on a course to help them to manage their grass better. That this is going to give them a return, equally as good, if not better, in the short term and the long term.

Temporal Importance

Well it has changed (timing of financial records from farmers), it has changed over the last few years in that it's steady busy now the whole time rather than the rush [at tax deadline time]. But it depends on the client that you're dealing with, if it's the beef farmer who you see once a year, there's still a drive towards the back end of October, November because, you know, that's where you're finalising it all. But for the bigger dairy guys and the bigger suckler guys and just the bigger, more commercial, more financial, savvy guys, you're meeting them regularly throughout the year now

I think there is a big sell here in assuming that what does a good financial manager look like and what does a poor guy look like? What are the poor guy's problems and what are the good guy's problems? And the reality actually when you look at it very often the good financial manager spends less time on managing his finances than the poor guy.

Social Influence

I think like the KT programme is the game in town at the moment but prior to that, you know, we had previous schemes that incentivised participation groups. And the payment, as Mairead says, is not, shouldn't be the be all and end all and the guys that are in the groups and have stuck with them have realised that. It might have been the carrot that got them in there and to look at groups where they might have wrote them off as, you know, a waste of time and I don't want lads coming around to my farm or I have no interest, you know, in those. But it gets them in and then they see the power of actually participating in a group and getting access to, you know, an advisor on a regular basis and discussing these issues and being, kind of raising the bar of our technical competencies and so on. But then, you know, that carrot is important and got a lot of people engaged in groups and, you know, I think there's lessons to be learned from that experience with this whole area as well.

I think the discussion group membership can drive on the dry stock because he can see if it's part of a good discussion group and he can see what the good guys are doing and then he

starts to learn from them and he drives on his performance. So I've seen fellows who are quite weak and through their discussion group, through membership, they've driven on.

Education Initiatives and Technology

I suppose we did a series of financial courses back in the early 2000s, it was kind of a broad brush and it was left to individual advisors just to identify farmers. But they were not necessarily hitting the right target audience I think, so we delivered the courses, we got the numbers through but and there was good material delivered. I would say that anyway. And I would say hopefully they got some benefit out of it, but you know, we didn't hit a whole cohort of farmers that could have benefitted from it. Then I suppose back, I'm not sure exactly what year now but we had the cash plan programme which was funded through the Department of Agriculture where we targeted new entrant farmers, new entrants to dairy and that got quota under the quota scheme at that stage. And we targeted them specifically with a very tight packaged course. Whereas the previous courses were kind of a broad rub of the brush, we got accounts analysis, we did profit monitor, we did investment, we did business planning, it was a bit of everything fired at the wall. Some of it stuck and some of it didn't. This, the cash plan course was very tightly packaged, it was cash recording, cash budgeting and it was built around say the cost control plan and the My Farm My Plan business planning tool as well. And that to me anyway worked very well.

I think there is probably an issue in terms of when they actually receive the education Bernard and Philip were involved in the training of young farmers. And you know, they are probably getting the education at a time when they are not financial decision makers and it is all well forgotten by the time they are financial decision makers, so we need to have a focus there for farmers who are becoming the financial decision makers and target them. And I think there is also the issue of, I have referenced this already that improving financial management practices is that maybe the financial management and the bottom line is not always the main thing for that farmer. And if that is the case can we ever encourage him to improve his financial management? If it is not his main motivator, you know. But I think that the whole selling of the benefits is something that we need to work

You really need to talk to or you need to discuss our thinking around the computer based tools really for the guys that are, I mean some of them, guys that you would regard as the good financial managers are long term users of these for a reason because as back to our previous discussion they can see it's an important job that they have to do, they're busy, busy people, they don't have a lot of time to be sitting down and transcribing stuff by pen, they want something that's going to make you know, do the job for them effectively, as quickly as possible, so they're going to make use of computers are a natural thing for that. Like I'd say we were writing off a whole section of the farming community there, people that are not computer literate but like we have put people on courses before and taken them through worksheets and everything else and they work fine on the day but they're the guys that drop them like a hot potato the minute the course is over because it's just too much work you know, so if you can get somebody clued into a computer programme that's a little, it might take a

little bit of a learning curve in getting it but once you get them there, there's a better chance that they'll actually use it.

Institutional Influence


From our point of view what's made us busier then as well, it's not just the farmers, but the banks, you know, there's a more of a requirement there it's fair to say as well, there's more interaction with, Revenue are more active now just in terms of their end then as well. And, yeah, Teagasc as well with the profit monitor, all the parties are more interactive with those commercial guys which is all driving us into being busier then as well. Sure it's the same across the board with anybody who's dealing with farmers now.

Well I think the whole banking environment though is a big driver for farmers on the type of financial awareness side, that I suppose, you know, there's a lot less tolerance of poor and sloppy financial management than there would have been we'll say even pre the crash. It is an influencer. And the quality of information that's been looked for and the amount of information has increased. And I suppose, you know, things like current account management would be more tightly monitored so it is a big driver from that perspective.

Appendix B: Conclusion

Appendix B-1. Farm Management Calendar Examples

Sample herd health plan on BETTER beef programme farms 2018

	Spring-calving herd		Autumn-calving herd	
	Cows & helpers	Calves	Cows & helpers	Calves
Jan	Dose fluke (as needed/after eight weeks in) ¹ Vaccinate early-calvers against scour Vaccinate salmonella ²			
Feb	Vaccinate late-calvers against scour ³ Clip tails at calving	Calving Navel treatment	Pregnancy scan	
Mar	Clip tails at calving Vaccinate BVD ⁴	Calving Navel treatment	Vaccinate leptospirosis ⁴	
Apr	Pre-breeding scan ⁵ Clip tails at calving Vaccinate BVD (late-calvers) ⁴	Calving Navel treatment Vaccinate clostridial disease (Blackleg etc.) ⁶		Weaning ¹² Monitor worms (cough/thrive/faecal count) dose as needed (earlier where calves have been creeping outdoors) ¹⁰
May	Pre-breeding scan (late-calvers) ⁵	Vaccinate clostridial disease (Blackleg etc.) ⁶		
Jun	Scan and treat fertility problems ⁴	Monitor worms (cough/thrive/faecal count) dose as needed ¹⁰	Begin pre-calver mineral sup. (buckets/bolus) Vaccinate salmonella ² Vaccinate scour ³	
Jul		Vaccinate calves pneumonia (inc. IBR) ⁷		
Aug	Pregnancy scan	Monitor worms (cough/thrive/faecal count) dose as needed ¹⁰ Vaccinate calves pneumonia (inc. IBR) ⁷		Calving
Sep				Calving
Oct	Housing clip tails	Monitor worms (cough/thrive/faecal count) dose as needed ¹⁰ Weaning ¹²	Vaccinate BVD ⁴	Calving Vaccinate calves pneumonia (inc. IBR) intranasal ⁷
Nov		Weaning ¹² Housing clip backs and tails	Vaccinate BVD (late-calvers) ⁴ Pre-breeding scan Housing clip tails	Vaccinate calves pneumonia (inc. IBR) intranasal ⁷ Housing clip backs and tails
Dec	Vaccinate leptospirosis ⁴ Check cull cow livers ⁷ Dose fluke (as needed/after eight weeks in) ¹ Dose worms (as needed/replacements and first-calvers) ⁸ Begin pre-calver mineral sup. (buckets/bolus)		Pre-breeding scan (late-calvers) ⁵ Dose worms (as needed/replacements and first-calvers) ⁸ Dose fluke (as needed/after eight weeks in) ¹ Scan and treat fertility problems ⁴	Vaccinate clostridial disease (Blackleg etc.) ⁶

Source: Irish Farmers Journal



The 10 Grazings Guide



Colour-Coded Rotations to Achieve 10 Grazings Per Paddock Per Year

	Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
1	Soil Sampling	1st Rotation		70 Units/N/Acre	Grass Cover/LU: 160-180Kg/DM		Cut Surplus Grass as Bales	Roadway Surface Quality			60% Closed Off	
2		65 Days									On/Off Grazing Back-Fence	Cows Housed
3		Spur Roadways		2nd Rotation								
4				22-24 Days								
5				Grass Cover/LU: 160-180Kg/DM								
6				Residuals: 4cm								
7				18-21 Days								
8				Grass Cover/LU: 160-180Kg/DM								
9				Residuals: 4cm								
10				18-21 Days								
11				Weekly Grass Works								
12				Grass Cover/LU: 160-180Kg/DM								
13				Residuals: 4cm								
14				18-21 Days								
15				Use Compound + Sulphur Fertiliser								
16				Pre-Grazing Yield: 1500Kg/DM/Ha								
17				Residuals: 4cm								
18				18-21 Days								
19				Cut Surplus Grass as Bales								
20				Pre-Grazing Yield: 1500Kg/DM/Ha								
21				Residuals: 4cm								
22				18-21 Days								
23				Weekly Grass Works								
24				Grass Cover/LU: 160-180Kg/DM								
25				Residuals: 4cm								
26				18-21 Days								
27				Cut Surplus Grass as Bales								
28				Pre-Grazing Yield: 1500Kg/DM/Ha								
29				Residuals: 4cm								
30				18-21 Days								
31				Weekly Grass Works								

Prohibited application periods for fertilisers

Fertiliser Type	Prohibited application period			
	Start date	Zone A	Zone B	End date
Chemical	15 Sept	12 Jan	15 Jan	31 Dec
Organic	15 Oct	12 Jan	15 Jan	31 Dec
Formulated Manure	1 Mar	12 Jan	15 Jan	31 Dec



Source: Teagasc