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Will I clear my feet? Perspectives on a Fishing Vessel Scrapping Scheme in Scotland

Hazel Curtis* and Edward Jones**

Abstract
This paper examines the factors which influence the decision to enter into a government scrapping scheme. In particular, the underlying motivations behind decisions are examined. Owners were participants in Scottish fisheries which were subject to stock recovery measures. Semi-structured in-depth interviews were conducted with 39 vessel owners during and following a vessel buy-back scheme. The analysis identifies several key factors affecting the decision to keep or dispose of a vessel in the context of a scrapping scheme. These are grouped into factors relating to owner and vessel characteristics, industry and market factors and preferences and expectations of owners. Owners expecting profitable operation considered how to use government grants to enable fresh investment in the fishery. For vessels with poor expected performance, owners’ principal concern in considering whether to dispose of a vessel was “will I clear my feet?” i.e. would the owner be clear of debt if he disposed of the vessel? Despite wanting to exit, if they could not get clear of debt by disposing of the vessel, owners suggested they might continue to operate unprofitable or low profit boats in anticipation of possible improved fishing opportunities arising from the next quota allocation.

Keywords: investment decision-making; fisheries; buy-back programmes; vessel profit; exit

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1. Introduction and Background

Against a background of a stock recovery programme, this study analyses perspectives of fishing vessel owners on decision-making during a scrapping scheme in Scotland. Owners were presented with an opportunity to dispose of their vessel(s) during the Fleet Resilience Scheme between August 2010 and March 2011. The scheme formed part of a broader strategy for fish stock recovery and thus fishing opportunities were declining. The strategy sought to consolidate fishing opportunities and rationalise the Scottish fishing fleet. Based on in-depth qualitative interviews, this study reviews the main factors which influenced decision-making by fishing vessel owners when presented with this opportunity. Given this background, the research investigated whether fishing vessel owners respond primarily to financial incentives to exit or, in particular, whether non-financial and structural factors are the dominant issues in making vessel disposal decisions.

More specific research questions were developed to enable analysis of vessel owners’ perspectives of a government-funding exit opportunity. The questions we sought to answer were as follows:

- What factors do owners take into account when making decisions relating to investment, exit or switching from one fishery to another?
- What values and beliefs do vessel owners hold that influence their decision-making?
- How do owners identify their specific options in relation to staying or exit?
- What techniques and practices do owners use to evaluate their options?
- What information do owners use to evaluate options?
- What roles do they ask others to perform? e.g. provider of expert analysis, neutral sounding board, stating their preferences
- What difficulties do owners experience as they try to identify options, evaluate options and make their choice?
- How do owners approach the issue of risk and uncertainty in the decision making process?
- What expectations do vessel owners have of the financial performance of their fishing businesses?

Perspectives from vessel owners presented here suggest that vessel owners are influenced in two principal ways. Firstly, we identify several key factors which influence vessel owners’ desires and preferences with respect to the disposal decision. Secondly, owners’ judgement as to their best option (keep or dispose) was not always the same as their preferred choice. This analysis also distinguishes owners’ decisions to dispose of a vessel from an owner’s decision to retire personally from the current fishery or the fishing industry.

In many modern European fisheries there is or has recently been excess fleet capacity (catching capability) in relation to the permitted fishing opportunity[1], which can lead to under-utilisation of vessels, low return on investment, issues with enforcement of fishing regulations and rent dissipation from fisheries[2]. Fleet over-capacity can occur when key fish stocks, having been over-exploited in the past, are depleted and are subject to stock recovery measures, meaning that permitted harvest is restricted. In cases of over-capacity, in order to achieve a more appropriate balance between fishing capacity and fishing opportunity, governments may try to reduce the number of vessels in their national fleet. Governments seek to design policy instruments to encourage actions by business owners that will achieve government policy aims of sustainable, profitable fisheries[3]. In recent years many fishing capacity management policies have not achieved their desired aims[4].

In Scotland during 2010 and early 2011, the Scottish government operated a “licence parking” and fishing vessel decommissioning (scraping) scheme known as the Fleet Resilience Scheme (FRS), which was open to owners of white fish and nephrops (Nephrops norvegicus, colloquially known as...
prawns) vessels throughout Scotland. The scheme allowed vessel owners to concentrate fishing rights onto fewer vessels and to sell or retire the “donor” vessels. Donor vessels ceased to be licensed fishing vessels and could be sold privately or the owner could apply for a Fleet Resilience Grant from the government up to a maximum value of the insured value of the vessel or £250,000, whichever was the lower. Vessels which were the subject of a grant were required to be scrapped. If the licence were to be used in the future for a new vessel, the grant must first be repaid to the government.\[5\]

The Scottish demersal trawl fishing fleet includes vessels that have been used to catch mostly whitefish, vessels that have been used principally to catch nephrops and vessels that catch a mixture of both, switching their majority catch from one year to the next depending on prevailing economic conditions such as availability and prices\[6\].

The size of the North Sea cod stock had been increasing since a record low in 2006\[7\], but because the stock size was still below the desired level, agreed levels of catching activity and volume of landings continued to decrease \[8\]. The recovering cod stock could reasonably be expected to result in better fishing opportunities at some time in the medium to long-term future\[8\].

In Scotland, quota unit holders could lease out their quota units enabling others to fish within the current quota year. Quota units could also be bought and sold, albeit via a cumbersome mechanism, and that would provide fishing rights for future years. This ability to move quota units between vessels meant that if total allowable catch (TAC) declined, and landings were effectively controlled, then owners could decide to remove some vessels from the fleet and distribute the associated quota units among remaining vessels. The use of this mechanism to reduce fleet size was obstructed by the introduction of an annually-allocated days-at-sea allowance. Rights to days at sea in future years could not be traded, therefore, there was no point accumulating large amounts of quota to a vessel if it could not obtain rights to days at sea to catch the fish allowed by the quota units\[9\].

The licence parking scheme was a mechanism within the Fleet Resilience Scheme created in 2010 to enable vessel owners to remove a vessel from the fleet and distribute the future days at sea allocation of that vessel (the donor vessel) among one or more remaining vessels. To encourage the take-up of this facility, there were grants for scrapping vessels, so that the fishing entitlements (quota units and days at sea entitlement) of scrapped vessels could be allocated to remaining vessels. Grants to scrap vessels had a maximum value which was the lower of £250,000 or the insured value of vessel. The scheme ran from August 2010 to the end of March 2011\[5\].

The rest of the paper is organised as follows. Section 2 provides a review of the literature on strategic decision-making by fishing vessel owners and develops a theoretical framework. The methodology is explained in section 3 and the analysis of interview responses are presented in section 4. Evidence is discussed in section 5 with conclusions arising from this study in section 6.

2. **Strategic decision-making by fishing vessel owners**

Anderson \[10\] notes that “Profit-maximizing individual participants will base entry and annual operating decisions on private returns and private costs.” Entry and exit decisions by such profit-maximising individuals depend on the profit produced by the assets and labour. However, owner-operators of single fishing vessels have been found to be income-, rather than profit-, maximisers\[11\]. Whilst they should ensure that their business remains solvent if they wish to continue operating it, owners are thought to be resistant to exit if there is any possibility of continuing in business despite losses over time\[12\]. The non-financial benefits of continuing to operate are high and exit is undertaken reluctantly, perhaps more so than in other industries. The
decision-making horizon for owners thus extends into the long term when the hope is that after surviving losses, the business can make profit. Since the fishing opportunity for quota species is set annually, decisions to continue operating or to dispose of a vessel are considered in an annual context. The short-term can reasonably be defined as a single year as there is an annual possibility of an upturn in fishing opportunities[13].

Nostbakken and del Valle, taking a firm-level approach, highlight that treating vessel owners as a homogenous group with identical motives and behaviours is not realistic and not useful when trying to design and manage successful, sustainable fisheries[14][15]. Several papers focus on strategic decisions and specifically the entry/stay/exit decisions, including resistance to exit, from an individual owner point of view[14][12][16][17]. These papers highlight the issues facing vessel owners, the factors that they consider when contemplating their response to declining profits and take a firm-level approach rather than a fishery-wide approach. Christensen and Raakjaer differentiate fishers into groups with differing characteristics and likely responses[17]. Del Valle and Mardle employed a mix of qualitative methods to identify explanatory variables and quantitative modelling to describe the explanatory power of individual factors[15][18]. Table 1 shows factors identified in previous research and in this research.

Insert Table 1 here

Behavioural and organisational theories of the firm emphasise heterogeneity in investment decision-making and the need for a better understanding of owner characteristics to be able to better predict stay or exit decisions in a declining fishery[19]. Nostbakken notes “Despite the extensive focus on excess capacity in fisheries, little empirical work has been done on firm-level investment behaviour in fisheries”[14].

3. Methodology

This research explores vessel owners’ disposal decisions during a period of declining fishing opportunities despite recovering fish stocks, when a government-funded exit scheme is available and when fishing rights were tradable. Our study uses a grounded theory, iterative approach. A review of the literature prompted key research questions which this research sought to answer. Exploring vessel owners’ responses to a specific exit opportunity with the possibility of government funding, lead to the development of a sub-set of further and more specific questions:

- What factors do owners take into account when making decisions relating to investment, exit or switching from one fishery to another?
- What values and beliefs do vessel owners hold that influence their decision-making?
- How do owners identify their specific options in relation to staying or exit?
- What techniques and practices do owners use to evaluate their options?
- What information do owners use to evaluate options?
- What roles do they ask others to perform? e.g. provider of expert analysis, neutral sounding board, stating their preferences
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- What expectations do vessel owners have of the financial performance of their fishing businesses?

Interview questions were selected based on factors identified from the literature, categorised into three groups, which are identified in Table 1. The first group of factors relate to characteristics of
owners and vessels, the second group are industry and market factors, and the final group relate to owners' preferences and expectations. Interview questions were designed with these three groups of factors in mind but also being open to the possibility of subjects’ decisions being influenced by additional factors not documented in the literature reviewed.

Decision-making is typically an unobservable process, therefore, to investigate the process, researchers must ask subjects making decisions to report their processes and considerations. Interviewing decision-makers is, therefore, the most appropriate approach to investigating this process [20][21]. Qualitative methods are appropriate for investigating and describing motives, intentions and rationales as these are part of a cognitive process of selecting between alternative courses of action.

The main data collection method used in the research was semi-structured interviews. Two groups of interviews were undertaken. First, vessel owners were interviewed in order to obtain data on characteristics of owners and their decisions. Second, triangulation interviews with relevant others, including lenders, professional advisers and vessel agents, were conducted to verify and corroborate findings from owner interviews. Two vessel agents interviewed were also majority owners of vessels involved in disposal decisions. These interviews combined the two perspectives of majority owner and someone to whom owners turned for advice.

Interviews were conducted with vessel owners and categorised according to their decisions as follows:
1. Owners who disposed of a vessel during the scrapping scheme (by scrapping or by sale);
2. Owners who seriously considered disposing of their vessel(s) but kept it(Them); and
3. Owners not thought to have considered disposing of their vessel during the scheme.

Interviews revealed that a few owners in the last group had in fact considered disposing of their vessel in recent years.

3.1 Profile of vessel owners interviewed
The study incorporated 42 vessels owned by the 39 interviewees. Study vessels included 32 that were entered into the Fleet Resilience Scheme and 10 that were not. Of the 42 study vessels, 28 were scrapped or sold and 14 were kept. Two of the interviewees were managers of vessel agents, firms that had majority and minority stakes in multiple vessels. They were interviewed as owners of five vessels in which the firm held a majority stake. In addition to agents, seven interviewees owned a majority share in two or more vessels, but only those vessels considered for scrapping or sale are counted among the 42 study vessels. Of the 32 study vessels that were submitted into the scrapping scheme, five boats were kept, five were sold and 22 were scrapped. Of the ten study vessels not submitted to the fleet resilience scheme, nine were kept and one was sold.

Insert Table 2 here

In total, 53 vessels were submitted to the Fleet Resilience Scheme, of which 38 vessels were scrapped under the terms of the scheme[22]. All ten of the interviewed owners who did not apply for a scrapping grant under the Fleet Resilience Scheme have remained as vessel owner or as owner and skipper.

Insert Table 3 here

Attempts were made to contact by telephone all vessel owners on the list of those who had applied for Fleet Resilience Scheme (FRS) grants. Once the research was introduced and briefly explained, owners were asked if they would be interested in taking part in an interview, were told that their
permission would be sought to record the interview, and were emailed an information sheet about the research. Face-to-face interviews were arranged with as many of the owners on the fleet resilience scheme list as possible. Interviews were mostly arranged at the home town or home port of the owners. Four interviews were conducted by telephone because the travel to the home town of the owners would have been unduly time consuming. Other factors that restricted interview numbers included an apparent unwillingness to partake on the part of a few owners and difficulty in arranging a suitable time and place to meet before the end of the interview phase. Four of the owners on the FRS list could not be contacted by telephone.¹

Candidates for triangulation interviews were selected non-randomly to ensure that a range of types of interaction with vessel owners was included. These included an accountant, a bank manager, vessel agents, producer organisations and a fishermen’s association representative.

4. Results
This section presents the findings of this study in three distinct sections as follows:
1. Stages in the decision-making process
2. Factors influencing vessel owners’ preferences
3. Decisions contrary to owners’ preferred choice – will I clear my feet?

4.1 Stages in the decision-making process
When considering the Scottish Government’s fleet resilience grant scheme, vessel owners’ comments revealed that rather than making one decision to keep or dispose of a vessel, they progressed through a series of key stages in an intricate decision-making process. In circumstances of diminishing profits and fishing opportunities, and with no scrapping grants available, it would be reasonable to expect that a proportion of vessel owners would consider options to continue, exit or switch to a different fishery [23]. When there is a government-funded exit opportunity, owners have a specific opportunity to consider.

In our sample, owners’ decision processes varied depending on whether they were still an active skipper or an owner of a vessel or vessels which they did not skipper personally. If disposing of a vessel implied finding a new job because the owner was currently skippering the vessel, then the need and expectation of finding a new job were factors affecting the disposal decision. An owner who was not skippering the vessel did not have these factors influencing their disposal decision.

Figure 1 shows the stages in the decision-making process relating to participation in the government-funded vessel scrapping scheme that were revealed by interviews. Above the dashed line are stages relating to the disposal or retention of the vessel under consideration, whether via the scheme or the second hand market. Selling the boat for an amount acceptable to the owner is more likely when a scrapping scheme is available, due to other vessel owners using their scrapping grant to purchase a second-hand boat. It is also possible that transaction costs associated with entering the scheme are lower than open market transactions including price discovery and buyer identification. Below the dotted line are stages in decision-making relating to the owners’ personal involvement in the fishing industry, as owner and skipper, as owner only, or possibly as holder of quota units, which are leased out to fishing businesses generating an income. These decision stages show that owners’ disposal decisions are affected by his thoughts, feelings and expectations about continued involvement in the fishing industry.²

¹ It was not possible to interview owners who had not applied to join the scheme if they were out of port at the time of interviews, therefore presence in port at given dates added an element of randomness to the selection of non-applicant owners for interview.
² In this case, there was a further complicating factor in the decision-making process, which was the existence of a government trial of catch quotas for cod in the North Sea. The trial was attractive to some as participation
4.2 Factors influencing vessel owners’ preferences

When asked about factors that affected their disposal decision, owners’ responses related to what they considered to be two specific issues. First, was their personal desire or preference to keep or dispose of the vessel and second was whether it was financially realistic or prudent to take their preferred course of action.

When answering about their preferred choice, whether or not to dispose of a vessel, most owners revealed a complex relationship between several factors. Interview analysis revealed that many of the factors that influence owners’ disposal decision-making do so indirectly. Factors operate in a hierarchy. The importance of each factor affects the effect or importance of other factors within the hierarchy. The complexity and hierarchical nature of factors revealed by interviews is illustrated by this comment from an interviewee:

“Well we knew what the ceiling was, £250,000, we had a rough idea what our quota was worth and took financial advice and my age…” [Scrapped; quit as owner and skipper]

The hierarchy of factors influencing decisions derived from interview analysis is presented in Figure 2 and shows that the many factors identified in both this and other research are not of equal status in decision-making. For example, it is not the age of an owner-operator which directly affects the decision, but rather other elements that are affected or influenced by age, such as his remaining number of years of expected physical fitness and good health, which in turn affects the ability to raise and repay new debt required for purchasing a new or replacement vessel. This in turn affects expected future profits, and so on.

Therefore, the direction and degree of influence of a single factor, such as owner’s age, can vary depending on the value of other influencing factors. For instance, an owner aged 50 with good expected near-future profits and a son in the business may be more likely to keep his vessel and remain in business than an owner of the same age, but poor expected near-future profits and no successor to the business.

A minority of owners found it relatively straightforward to arrive at their preferred option, for example, if their health was poor and they were unable to skipper the boat themselves, combined with their expectation of not being able to employ an effective skipper for the boat, they could easily see that disposing of the boat was their preferred option.

“…just simply, from a physical point of view, my body giving, basically too much, and my, also my wife keeps asking me to stop, er, a lot of people saying how unhealthy and unwell I was looking at the time” [Scrapped; quit as owner & skipper]

resulted in higher cod quota per vessel. However, the rules of the trial stated that vessels could not be registered for both the scrapping scheme and the trial.
Most owners expressed a clear preference about whether they wanted to keep or dispose of a vessel at this time, while the scrapping scheme was in operation. Several owners clearly wanted to leave the industry themselves, which effectively also meant disposing of their vessel (scrap or sell). Several owners wanted to continue in the industry but cease owning the particular vessel under consideration. Others clearly wanted to or wished to remain as either an owner/skipper, or just as an owner.

“I think there's a good future in the fishery, there's no question about it, if you can last the pace, but I'm 50 this year and by the time things will probably level out that will be the time to finish, so ... there's just no need for me to go through it all” [Scrapped, switched fishery]

The following sections contain discussion of the factors affecting owners’ preferences to keep or dispose of a vessel. Factors are divided into the three groups shown in Figure 2.

4.2.1. Factors relating to owners and vessels
Factors relating to owners had more influence on single-vessel and non-corporate owners. The disposal decision is much more linked to personal issues if the owner is also the business operator and manager and especially if only one boat is owned. For a corporate owner, such as a vessel agent or business with multiple vessels, the disposal decisions do not have such an impact on the personal life and lifestyle of the decision-maker.

Whether an owner enjoyed his work as a vessel owner/skipper, and expectation of continuing to do so, directly influenced the preference to remain in the industry. For a multi-vessel owner, the expectation that the rewards of fishing would continue might influence his decision to dispose of only one, or more, of his vessels and to continue owning and operating remaining vessel(s).

There was a widespread understanding and acceptance among owners that those with an identified successor would be less likely to wind-up their business and leave the industry. However, the fact that an owner would not choose to wind-up their business did not mean that they would not dispose of their current vessel. An owner with a successor might be more likely to replace the current vessel with a newer one. The most obvious successor to the business would be the owner’s son but other younger male relatives were considered as successors. In some cases, there seemed to be a desire to have a successor and, in the absence of suitable younger male relatives or in-laws, even a young crew member who showed promise, could be considered a potential successor to an owner who really wanted to pass his business on rather than see it wound up. Several owners had sons who did not want to go into the family fishing business.

“Well, there was a few factors behind the decision. One that was at the forefront of my mind was that my son was going to be going to sea” [Kept; stayed as owner & skipper]

“other reason is I’ve nobody coming behind me, I’m just on the boat myself” [Scrapped; quit]

Around half (19) of owners mentioned their age as a factor strongly influencing their disposal decision. However, the relationship between the owner’s age and his likelihood to sell or scrap his vessel is not straightforward. Owner’s age has different effects on the decision-making outcome depending on values of other factors. If the owner/skipper is young enough to expect a substantial period of working life left, he is more likely to consider that he’s young enough to retrain, still be interested in trying a new line of work and have confidence in his ability to succeed at something new.
“The decision was, it was really easy to take. I can see I’m young enough that I can do something else.” [Scrapped; quit]

After reaching middle age, an owner might feel he needs to continue working, but feel that he is too old to retrain, or too old to have good prospects of finding another job. These individuals may end up staying in fishing even if it is not profitable, simply because it provides a wage for his labour and he doesn’t see another way of getting a wage.

“...and I didnae fancy the idea of retraining after we’d sold the business, paid off the bank loans, the debt. Yes there was an attractive sum there, but certainly I dinnae think enough to last me the rest of my days. I would have had to retrain and get a job, something else...” [Kept; stayed as owner & skipper]

Owner age is relevant in conjunction with the need to reinvest in order to stay in the industry and compete successfully. If a loan is required for reinvestment, for instance an upgrade to a newer or better vessel, owners feel that they must have enough working years left to skipper the boat successfully and be able to pay off the loan before they retire or hand the business on (if there is a successor). Bank managers who assess the risk of such loans also take the view that successful loan repayment is highly dependent on the skippering skill of the owner and his continued contribution of that skill to the business.

“Well, what they’re looking is right, the guy’s taking on the boat, he’s 45, what quota does he have, how well has he done in his last boat, is there a plan of accession, does he have a son coming through, does he have a daughter with a future son-in-law coming through. It’s sort of like fishing dynasties, and right, ok, we know that guy’s got 3 daughters, but look who they’re married to, blah, blah, you know, we’ll see how that works. And often the guy late 40s, 50s, he’s done well, he’s got a bit of cash behind him and he’s not looking to over-extend himself, and the bank will look kindly.”

Triangulation interview with vessel agent

Older boats were considered to be difficult to sell which meant that a scrapping scheme might be the only way to get any money for an older vessel, thus making acceptance of the scrapping grant more likely in respect of older boats. Older boats were also thought to be less likely to perform well in the near future, especially compared to newer, more efficient vessels, so an older boat was more likely to be taken as a factor in expecting poor near future profits.

4.2.2. Industry and market conditions

Interview analysis revealed that owners’ preferences to keep or dispose of vessels was influenced by several factors which related to industry or market conditions. Preferences were found to be related to internal and external business conditions including owners’ expected near-future business performance.

The amount of recent profits (rather than profit margin) affected owners’ expectations of near future profits and also affected the amount of debt carried by the business. Owners were concerned that debt may need to be increased if recent profits had been negative. Recent profit also affected the amount of tax that might be due if the business was wound up. Poor business performance in recent years was expected to reduce the amount of tax due on wind up and a record of good recent profits was expected to increase the tax due on wind up.

If recent business performance had been good, it might be expected at first glance that an owner would be less likely to dispose of a vessel. However, good recent performance might also mean a
good wind-up value of the business, and if the owner is over 50, he might judge that the wind-up value will be enough for him to take early retirement. This is a key aspect of how owners’ age interacts with other relevant factors in the disposal decision.

“... and I’m thinking that at my age, am I needing all this stress? Do I have to do it? I don’t.” [Scrapped; stayed as owner & skipper smaller boat]

Several owners were concerned about scrapping the boat at a time when many others would scrap vessels, and having to find buyers for non-tangible assets such as days-at-sea entitlement and quota units when the market was likely to be inundated. These owners judged that there was too big a risk of not getting good prices for these assets and then not getting clear of debt. Being averse to the risk of getting low prices for the sale of non-tangible assets might make owners more likely to continue in business for the short-run. Other owners felt that the chance to exit via the scrapping scheme was too good to miss, given the risks associated with continuing in a boat that was getting older and therefore less valuable.

“I couldn’t see a light at the end of the tunnel so this was a good escape route, sort of cleared my feet and forget about it.” [Scrapped; quit]

Owners considering quitting typically had consulted their accountants about any tax liabilities that might be incurred or realised upon sale of their business. This was clearly an element taken into consideration when owners were calculating the net wind-up value of their business if the vessel they were considering scrapping or selling was the only vessel in the business.

“if I want to dissolve the company I’ve then got a further tax bill as well” [Sold; quit]

Owners put a lot of weight on expectation of near-future profit and were very conscious of the various costs, revenues and other factors that contributed to profit.

“the simple equation was, I mean, my leasing costs were going to go up 60 thousand before I even put the borrowing in there for the engine, which would be at least another 30 thousand, so that was 90 thousand. That’s my year's profit away.” [Scrapped; switched fishery]

4.2.3. Owner preferences and expectations
If owners concluded that continuing to own the vessel was likely to be a negative experience, i.e. their clear preference was to dispose of the vessel, then they would consider if their preferred option was financially realistic or desirable. For owner/operators of one or two boats, financial feasibility included the question of whether they had a need for an alternative income and/or job activity. If owners did need an alternative income or job, they also considered what their chances were of securing an alternative occupation that would provide more benefit than their current situation, e.g. more enjoyable work, more lucrative, more time with family. The need for an alternative income was clear for some owners who had several years of their working life remaining and for whom the sale of the fishing business would not generate enough capital to provide a sufficient annual income.

A few owners concluded that they would prefer to dispose of the vessel and cease to be a skipper, but they were unable to identify an alternative occupation that would deliver the combination of financial and non-financial benefits they expected to receive from continuing to operate the vessel. This “lack of a better option” led them to continue owning and operating their boat on the basis that
it was their least worst option, even though it was not what they would really prefer to do. Most of the owners facing this type of disposal decision were skippers of their own boat.

“I didnae fancy the idea of retraining after we’d sold the business. …I would have had to retrain and get a job, something else …then you begin to dig deeper intil [into] it, well, what do you do? I have to get a job, I couldnae … a job with the perks I’ve got just now” [Kept; stayed as owner and skipper]

The need for an alternative income depended in part on how long the owner had until he received his expected retirement income or until he felt he was ready to retire. Several owners expressed a positive feeling about quitting fishing in order to enable more desirable occupations or lifestyles. This contrasts with the more commonly expressed view that skippers are reluctant to give up the lifestyle of the fisherman.

Interview analysis illustrates that decision-makers placed considerable weight on future income streams and likelihood of future employment in making their disposal decision. Owners with low expectation of being able to find alternative employment and income decided to stay and continue to operate their business in the short-run, despite relatively poor expectations of their own near-future business performance in the hope that their business fortunes would improve. The following quote exposes the tensions between two different uncertain futures that owners are faced with:

“At least I would hope to come away with enough as [to] maybe spend two years hoping to get into something else. Ken [you know], I’m reducing, each time I think about it, I’m reducing the sorta expectation, and thinking, well, if I can just get enough to see myself 18 months, surely I’d get a position, some position by then. But then again you sit and you say to yourself, well, even though I got another job, although this job is hard, now, would I enjoy it as much as I still… enjoy it?” [Kept; stayed as owner & skipper].

Antipathy towards an uncertain future outside the industry influenced some owners’ preference and decision to remain in their current situation on the basis of “better the devil you know” which in reality translates to a preference for what they perceive as a lower risk option:

“aye it really arrives, the uncertainty, because since I was this high [indicates height of small boy], I’ve always known what I was doing and how I would do it. If I leave this industry I’m into the unknown, I’m in an uncertain period, where am I and where am I going?” [Kept; stayed as owner & skipper]

The owner’s estimate of the wind-up value also influenced his conclusions about his need to find an alternative source of income should he decide to wind-up his fishing business. If an owner did not need an alternative income then he was freed from the uncertainty about how to provide it and the possible distaste for having to learn or adopt a new trade.

Owners’ interview responses revealed that they were very aware of all the assets and liabilities contributing to the estimated wind-up value of their businesses. The four principle assets are typically the boat itself, the quota units held against the licence, the licence, together with any specific additional entitlements on the licence (e.g. shellfish entitlement) and, in recent years, days-at-sea entitlement. If the boat was scrapped, the licence would cease to exist and therefore could not be sold, however under the fleet resilience scheme, the entitlement to days-at-sea in future years could be “parked” onto another licence, in effect, could be sold, or if an owner had more than one vessel, could be parked onto the licence of the other vessel owned.
Liabilities that must be deducted from the value of assets include trading debts, loans, repayable elements of grants received and tax liabilities. Outstanding debts to suppliers or to the bank or other lenders were at the forefront of the minds of owners who thought that their wind-up value might be near or below zero, as illustrated in this interview quote:

“So, we’ve got one hundred and fifty thousand worth of debt, overdraft, we’ve got a fifty thousand pound balancing charge, we’re now up to two hundred thousand pounds and just, general invoices and debt that would be accruing will burn up the other forty, fifty thousand, no problem, so effectively you’d be lucky if you could clear your feet with the debts.” [Kept; stayed as owner & skipper]

Another deductible item is the value of any grant(s) recently received from the government, which must be repaid if the vessel is scrapped using government funding. Several owners included such repayment in their calculations of wind-up value.

A final issue with respect to the value of the vessel was market timing. Several owners took the view that they would certainly be interested to dispose of the vessel but the key question for them was one of getting the timing right. If vessel prices are derived from their future profits then the decision not to enter the scheme reflects an expectation (or hope) of higher future profitability in the sector.

A number of selected quotes, which demonstrate each of the factors discussed above, are presented in Table 4.

Insert Table 4 here

4.3 Decisions contrary to owners’ preferred choice - will I clear my feet?
The outcome of the decision-making process depends on owners’ preferences to keep or dispose of a vessel and on their assessment of what was realistic from a financial perspective, in particular their expectation of being clear of debt if they did dispose of the vessel. Some owners were able to proceed with their preferred choice and some owners were not, because financial circumstances made their preferred choice impossible or unlikely to succeed.

“I didn’t want to scrap her but the business wasn’t making money. She’s [over 20] years old and the costs of running the boat are getting more expensive. And with our ages, we just told [the hired skipper] we had to downsize” [Scrapped. Stayed as owner]

4.3.1. Getting clear of debt
For vessel owners who expected poor performance, and owners who wanted to leave, owners’ principle concern was “Will I clear my feet?” - would there be a zero or positive net cash position on winding up the business? If they could get free of debt-- colloquially “clear my feet” – by winding up they would prefer to dispose of the vessel.

“If everything comes in, ... we should clear wir[our] feet.” [Scrapped; quit as owner]

“Aye, I’ll need that plus the price of the quota to clear my feet.” [Scrapped; quit as owner]

A few owners indicated that they needed or wanted to dispose of their vessel, even if it meant that they would not get clear of debt. Their need or desire to dispose might for instance be due to health
issues that meant they could no longer skipper, combined with no expectation of being able to hire a skipper and/or no expectation of being able to run the business profitably in the short or long-term.

“Oh, we came out behind, no question, ... there wasn’t enough funds from the decommissioning to clear the debts on that vessel.” [Scrapped. Stayed, multi-vessel owner]

“.even if I have to sell the quota and come out with nothing, not a penny, I would still do it. Because just to get free of the burden would be such a fine thing, a good thing.” [Scrapped. Quit]

Analysis of interviews showed that there were several owners who preferred to dispose of their vessel, but who nevertheless kept it and continued operating because they judged that they could not get clear of debt if they disposed of the vessel under current circumstances. Although the final decision was contrary to the owners’ preferred outcome, this decision can be considered rational. Owners were concerned they would be left with outstanding debt and no or limited alternative income if they scrapped their boat in the decommissioning scheme. However, if they had access to enough cash or income to continue fishing in the short-term (e.g. if their vessel agent bought a larger equity share of the vessel business), external factors such as fish prices, levels of fish quotas and fuel costs might improve such that the value of their business improved and there could possibly be a way to dispose of the vessel and leave the industry free of debt in the medium-term. Fish quotas are set annually so there is nearly always less than a year until the next opportunity for quota units to increase in sale or fish value.

“if I’d had enough to clear the debt, ken, clear a’ [all] your balancing charge, the tax, even though you kinda walked awa’ guy near level. ...I do think if it had been a different kinda get oot clause, and everything’s goin’ to be covered, I probably would have gotten oot.” [Kept, stayed as owner & skipper]

Owners expecting profitable operation considered how to use government grants to enable fresh investment in the fishery. A few owners used the scheme to dispose of their current vessel(s) with the intention of reinvesting in newer vessels. This observation clearly illustrates the lack of linearity between the value of an independent variable, e.g. recent profit amount, and likelihood of disposal.

Figure 3 illustrates the path by which owners arrived at their decision. Several interviewees kept a vessel they would really rather have disposed of, whether or not they personally wanted to leave the industry. There were a few owners who expressed that they would like to remain in business with that vessel but could not see how, financially, they could continue to trade.

Insert Figure 3 here

5. Discussion
The decision to dispose of a vessel during the scrapping scheme was found not to be a single decision but an intricate process. The disposal decision investigated in this study was whether to retain ownership and operation of a vessel or to dispose of a vessel, by selling or scrapping it. Some previous research does not distinguish between decisions made by owner-skippers and those made by owners employing skippers [16][18], a distinction which was found to be significant. Furthermore, the issue of ownership of multiple vessels was considered. A number of the decision-makers in this study were working as skippers of a vessel they owned. The decision regarding disposal of the vessel is closely associated with the decision to personally continue operation or exit from the current sector of the fishing industry. In some cases it amounts to the same decision. This is particularly the
case for an owner-skipper of a single vessel who does not wish to work for another owner. The question of whether the exit in consideration is of the person or of the vessel has been slightly opaque or apparently considered to be equivalent in some research [18][15]. This study reveals the importance of this distinction.

A key aspect of the decision is the financial consideration. For owners, financial distress, on a personal level, could carry the implication that a family home other personal asset has to be sold or substantial personal debt incurred. Alternative sources of income may provide sufficient incentive to exit the industry. This research reveals that owners preferred to continue in business, despite low recent or expected profits, due to an expectation that ceasing activity and disposing of the vessel would leave the owner in financial distress. In cases where an owner or an owner-skipper would effectively be exiting the industry, the price for the vessel plus remaining quota is effectively the price for the business. Industry and market conditions are the determinants of the market price of a vessel whilst the value of the business to the owner also includes the factors relating to owners and vessels (see Figure 2). A business value includes the value created by combining the assets and human capital. It is rational in such cases not to exit if the price of the vessel does not exceed the value of the business. This finding could partly explain the time-lag between decline in average profits and decline in fleet capacity in a fishery, identified by Bjorndal and Conrad (1987) [19]. However, there are two other key influences which make a market price differ to the business value in such cases. The first is the short-term nature of the quota system and the second is the value of non-financial benefits.

A recurring perspective from owners was that negative or low accounting profit alone may not induce owners to remove vessels from a fishery in the short-run i.e. before the next annual fishing quotas are agreed. The key influences of owners’ preferences and expectations regarding the fishing opportunity (quotas) on the disposal decision are presented in Figure 2. When there are annual changes to the fishing opportunity, e.g. via changes to fishing quotas, owners are never more than one year away from a possible improvement in business opportunities and outcomes. Therefore, the change to a new quota year can define the short-term in their decision-making. Negative or low accounting profit may induce owners to dispose of their vessel in the current year if they can continue to operate until after the next quotas are decided. This uncertainty gives rise to the hope that the next quota allocation will lead to a rise in expectations of income as well as an increase in the wind-up value of the business.

In most cases, a necessary prerequisite for disposing of a vessel and winding up the business voluntarily was that the owners expected to get clear of debt by disposing of the vessel and associated assets (e.g. fishing rights). Being clear of debt slightly differs as a financial motive to getting a fair price. In the presence of a short-term quota system, an option which is almost certain to leave the decision-maker with considerable debt is less attractive than surviving to the next quota allocation when circumstances may improve. The desire to quit and expectation of quitting the industry free of debt free are not widely discussed in the extant literature. One relevant study is provided by Del Valle et al. [15] who found that vessels in the Basque inshore fleet were less likely to exit current fishing activities if a significant bank loan was outstanding on the vessel. The results presented here suggested that getting clear of debt is a key influence on the decision for owners. A few owners even revealed a desire to dispose of their vessel that was so great that they would have done so even with a small negative balance on wind-up. However, although some owners no longer wanted to keep their vessel, the disposal decision in the short-run was generally determined by whether disposal would leave them free of personal debt. Vessel owners expressed preferences to dispose of their vessel, by sale or scrapping, but instead decided to keep the vessel as winding up the vessel business would have left them in debt and possibly financial distress. For owners whose preference was to dispose of the vessel, the question was really a matter of timing – now, i.e. during
the scrapping scheme, or later, when business liquidity might have improved. For many vessel owners, their desire to dispose of their vessel was based on several of the factors identified in Figure 2 but their final decision depended crucially on whether they could get clear of debt if they disposed of the vessel now. Thus, the likelihood of any individual owner to dispose of a vessel, whether by scrapping or by sale, depends both on the preference with respect to disposal and then whether the decision will leave the owner clear of debt.

Personal circumstances, expectations and preferences as well as business factors affect the decision to keep or dispose of a vessel, especially when the owner has been skippering the vessel personally. Vessel owner/operators place considerable value on lifestyle factors. They consider factors relating to the fishing lifestyle and the lifestyle of alternative employment when making a vessel disposal decision. For vessel owners who are or have been skippers, the disposal decision is closely tied to the decision to stop working in the industry altogether. This gives rise not only to the decision being a comparison of scrapping grants with business rather than vessel prices but also with the non-financial benefits of being a fisherman, such as how much they enjoy their work as a skipper and how much their sense of identity is dependent on being a fisherman.

Two final issues relating to fleet capacity are worthy of comment. Firstly, a decision to sell a vessel and retire from owning and operating the vessel does not necessarily equate to the removal of the vessel from the fishing sector, as the vessel may be bought and operated by someone else. However, when a scrapping scheme is in operation, interviews in this study revealed the perception of owners and vessel agents that most of the cash available in the market to spend on buying second hand vessels comes from government scrapping grants. Secondly, some owners accepted a scrapping grant then used the money to reinvest in a younger second-hand vessel. Nevertheless some capacity may be removed from the industry if the second-hand purchase is from the existing fleet and another owner stops operating a vessel. Without the money introduced via the scrapping scheme, those owners who sell would probably have continued to fish for at least the current year. While there are unused vessel licences in existence, a scrapping grant could be used to buy a vessel from outside the fleet and thus mean that the grant did not reduce capacity in that fleet sector.

6. Conclusions

In this study interviews were conducted with owners of fishing vessels during a government-funded scrapping scheme. The results provide valuable insights into the decision-making process in the Scottish fishing industry. In order to induce the sale of a vessel, owners, and especially owner-skippers, weighed up the financial benefits of quitting. They also took into account the short-term nature of the quota system which for many meant that short-term survival to the next issue of quotas was preferred to immediate exit. In addition non-financial benefits of the fisherman’s lifestyle and a lack of alternative opportunities were also important. Most striking though was the primacy of the desire to “clear my feet”.

Evidence from this study suggests that owners arrive at some decisions contrary to their stated or revealed preferences. Some owners would prefer to continue in business but decide to dispose of their vessels whilst some owners who display a preference to dispose of their vessel decide against disposal, at least for the current quota year (calendar year). These owners are in effect torn between staying in and leaving the fishery themselves. This paradox is driven, in general, by the desire to stay against a background of declining fishing opportunities.

A number of key influences on the disposal decision are identified. These are grouped into three categories and arranged in a hierarchy for analysis. In reaching their disposal decision, owners first weighed-up whether disposal at this time was their preference. Those who wished to dispose would
evaluate whether they would “clear their feet” whilst those who wished to stay would evaluate whether they had sufficient cash to trade until the next quota agreement. Even if a vessel business was unprofitable, if winding up would leave the owner in debt, some owners decided not to dispose of the vessel but to continue to operate the business in the short-term. This decision was taken because they preferred the possibility of getting clear of debt in the future to the certain outcome of being in debt if they were to dispose of the vessel immediately.

Acknowledgements
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References


[13] Fisheries Administrations in the UK, Rules for the management of the UK’s fisheries quotas in areas I, II, IV, VI and VII (and associated areas) and in Faroese waters (Vb) for 2012, 2012.


## Tables with captions for Will I clear my feet?

### Table 1

Categorisation of factors identified in the literature that have been found to influence vessel owner decision-making in the stay or exit (keep or dispose of vessel) decision in various countries and types of fishing industry.

<table>
<thead>
<tr>
<th>Category of influencing factors</th>
<th>Factors identified in other papers</th>
<th>References</th>
<th>Identified in this research</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owner and vessel / vessel business characteristics</td>
<td>Age of owner</td>
<td>[16]</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Years until retirement</td>
<td>[15]</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Owner’s years of experience as skipper</td>
<td>[15]</td>
<td>Indirectly</td>
</tr>
<tr>
<td></td>
<td>Skipper’s skill</td>
<td>[15]</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Education of owner</td>
<td>None found</td>
<td>Indirectly</td>
</tr>
<tr>
<td></td>
<td>Presence of a successor to the business</td>
<td>[15]</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Age of vessel</td>
<td>[18]</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Recent profits of the vessel business or Gross surplus of the vessel</td>
<td>[15]</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Degree of dependency on bank mortgage</td>
<td>[15]</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Total revenue</td>
<td>[25], [18]</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Crew size of vessel</td>
<td>[18]</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Household wealth</td>
<td>[16]</td>
<td>No</td>
</tr>
<tr>
<td>Industry and market factors</td>
<td>Congestion of fleet proxy</td>
<td>[18]</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Value of vessel on 2nd hand market</td>
<td>[18]</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Existence of decommissioning grant</td>
<td>[15,18,24]</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Productivity / relative productivity</td>
<td>[18]</td>
<td>Indirectly</td>
</tr>
<tr>
<td></td>
<td>Market share of the firm</td>
<td>[18]</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Average interest rate</td>
<td>[18]</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Stock health of key target species</td>
<td></td>
<td>Indirectly</td>
</tr>
<tr>
<td>Owner preferences and expectations</td>
<td>Profit uncertainty</td>
<td>[24]</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Owner’s anticipated future profit</td>
<td>None found</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Alternative job - possibilities and expectations</td>
<td>[25]</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Income potential / expected revenues</td>
<td>[18]</td>
<td>Yes</td>
</tr>
</tbody>
</table>

### Table 2

Outcomes for study vessels submitted into Fleet Resilience Scheme

<table>
<thead>
<tr>
<th>Outcomes for study vessels submitted into Fleet Resilience Scheme</th>
<th>No. of vessels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kept</td>
<td>5</td>
</tr>
<tr>
<td>Sold</td>
<td>5</td>
</tr>
<tr>
<td>Scrapped</td>
<td>22</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>32</strong></td>
</tr>
</tbody>
</table>
### Table 3

**Outcomes for all vessels submitted into Fleet Resilience Scheme**

<table>
<thead>
<tr>
<th>Outcomes for all Vessels submitted into Fleet Resilience Scheme</th>
<th>Number of vessels whose owners were interviewed for this study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Withdrawn from scheme (some of these were sold privately, some were kept)</td>
<td>12</td>
</tr>
<tr>
<td>Timed out (not scrapped by deadline)</td>
<td>3</td>
</tr>
<tr>
<td>Scraped</td>
<td>38</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>53</strong></td>
</tr>
</tbody>
</table>
Table 4
Additional quotes from interviews with owners on the factors influencing disposal decisions.

<table>
<thead>
<tr>
<th>Factors relating to owners and vessel</th>
<th>Industry and market conditions</th>
<th>Owner preferences and expectations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Having a successor to the business</strong></td>
<td><strong>Recent profits</strong></td>
<td>“was still successful” [Kept; stayed as owner &amp; skipper]</td>
</tr>
<tr>
<td>“Well, there was a few factors behind the decision. One that was at the forefront of my mind was that my son was going to be going to sea” [Kept; stayed as owner &amp; skipper]</td>
<td><strong>Getting the timing right</strong></td>
<td>“putting it all together I just thought, now is the time to get out” [Sold; quit as owner]</td>
</tr>
<tr>
<td>“what’s a sort of wee bit prospect on the horizon is my nephew, has come aboard the boat, he’s 17” [Kept; stayed as owner &amp; skipper]</td>
<td><strong>I think there’s a good future in the fishery, there’s no question about it, if you can last the pace, but I’m 50 this year and by the time things will probably level out that will be the time to finish, so ... there’s just no need for me to go through it all”</strong> [Scrapped; switched fishery]</td>
<td><strong>Expected near future profits</strong></td>
</tr>
<tr>
<td>“The only thing that I have just now, a little bit of lifeline, hope, is that there’s a guy been with me since April and I’ve encouraged him ... He is showing potential” [Kept; stayed as owner &amp; skipper]</td>
<td><strong>We've been successful”</strong> [Kept; stayed as owner &amp; skipper]</td>
<td><strong>Will [the cost of] fuel cripple us? It’s almost like dog eat dog now. You’re hoping that you’re one of the survivors, and hoping that ... well if it keeps cutting you’ve got to catch less, and hope you still get a slice of the cake that’s left, that you’re there to get it”</strong> [Kept; stayed as owner and skipper]</td>
</tr>
<tr>
<td>“But I’ve got two sons in law, for the future” [Scrapped; stayed owner only of other vessel]</td>
<td><strong>Owner age</strong></td>
<td>“Well to be honest if we’d kept going the way we was going, I’d say the bank would have tied us up [made us tie the vessel to the quayside and cease trading]. They’d say enough’s enough” [Scrapped; quit]</td>
</tr>
<tr>
<td>“otherwise i’ve nobody coming behind me, I’m just on the boat myself” [Scrapped; quit]</td>
<td><strong>Vessel age</strong></td>
<td>“It’s brought me to my knees. Well not quite, but not far off it. If it had gone on another couple of years, I would come to a position where the tradesmen wouldn’t come down, cos [because] he wasn’t getting paid” [Scrapped; quit]</td>
</tr>
<tr>
<td>“But I just spoke to my son, he’s with me in the boat, and he was getting fed up as well” [Scrapped; quit]</td>
<td>**So I have decided, even though I’m 50 year old that I’m staying in the industry” [Kept; stayed as owner &amp; skipper]</td>
<td>“Noo we’re in a situation, oor boat’s probably worth nothin’ on paper, but to me it’s worth, fit[what] I’m saying to you, it generates income.” [Kept; stayed as owner &amp; skipper]</td>
</tr>
<tr>
<td><strong>Owner age</strong></td>
<td><strong>“...and we had to spend over £200,000 on the boat and weighing up the age of the boat, weighing up my age...”</strong> [Scrapped; stayed as owner &amp; skipper smaller boat]</td>
<td><strong>Alternative employment, need for and expectation of being able to find</strong></td>
</tr>
<tr>
<td>“I have decided, even though I’m 50 year old that I’m staying in the industry” [Kept; stayed as owner &amp; skipper]</td>
<td><strong>Vessel age</strong></td>
<td>“I should have been able to retire and I won’t have enough money to retire. I’ll have to keep working.” [Scrapped; quit]</td>
</tr>
<tr>
<td>“I thought there was no takers for buying boats, older boats, so it was just, it was like trying to keep things turning over, but that didn’t work” [Scrapped; quit as owner only]</td>
<td><strong>“I thought there was no takers for buying boats, older boats, so it was just, it was like trying to keep things turning over, but that didn’t work”</strong> [Scrapped; quit as owner only]</td>
<td>“my wife says, ken, we keep daein [doing] fit [what] we’re daein and in another 7, 8 say 10 year maximum you can stop and that’s it. Whereas [if] we stop now, we hawenae [have not] got enough, we’ve still got family living in the house. I will have to work til I’m 65 to someone else [if] I stop now &amp; get a job.” [Kept; stayed]</td>
</tr>
<tr>
<td>“ok she’s old, but for my mode of fishing she’s quite an economical boat to fish with” [Kept; stayed as owner &amp; skipper]</td>
<td><strong>“ok she’s old, but for my mode of fishing she’s quite an economical boat to fish with”</strong> [Kept; stayed as owner &amp; skipper]</td>
<td>“getting rid of the boat doesn’t lighten my load at all, er, it just means that, it gives me more money to go on and do other things” [Sold; quit as skipper &amp; owner]</td>
</tr>
<tr>
<td>“but probably the age of the boat, we’ve spent a lot of money on the boat on the last 7 years and ultimately she’s not getting any younger” [Sold; quit as owner &amp; skipper]</td>
<td><strong>“but probably the age of the boat, we’ve spent a lot of money on the boat on the last 7 years and ultimately she’s not getting any younger”</strong> [Sold; quit as owner &amp; skipper]</td>
<td>“after we’d sold the business, paid off the bank loans, the debt. Yes there was an attractive sum there, but certainly I dinnae think enough to last me the rest of my days” [Kept; stayed as owner &amp; skipper]</td>
</tr>
<tr>
<td>“the boats that’s being decommissioned, they’re old and they’re not much cop [good] for the job they’re doing” [Kept; stayed]</td>
<td><strong>“the fishing was just getting too competitive and we couldn’t compete”</strong> [Kept; stayed]</td>
<td><strong>Estimated wind-up value of business or effect of disposing of one vessel</strong></td>
</tr>
</tbody>
</table>
against the new boats” [Scrapped; quit as owner & skipper]

**Enjoying the job, wanting to stay**

“The rewards are being self-employed and being involved in an industry that you love and feel passionate about. The financial rewards are fairly limited.” [Scrapped; stayed as owner only]

“Well, I've enjoyed being a fisherman, and when I first got my boat, just the, just pride, ken?” [Scrapped; quit as owner & skipper]

“just, the fishing, it's in your blood, that’s it” [Sold; switched fishery]

“Yes we had, we’d tried to sell it, we’d tried to put it on the market. But the state of the industry was such that nobody was interested in second hand boats” [Scrapped; stayed as owner only]

“Well if we take this 250 thousand, I was only going to get 240, because I had a payback penalty, I had 10 thousand pound of grant money outstanding, which they were going to deduct, so, effectively they were saying we’ll give you 240K” [Kept; stayed owner & skipper]

“I mean at the end of the day I'm not going to walk away with, well it's all relative, I'm not going to walk away with huge amounts of money” [Sold; quit as owner & skipper]

“We’ve got a quota worth, pretty much cost a million pounds right now, maybe tomorrow it’s worth nothing, but right now it’s cost a million pounds. We’ve got a boat probably worth about a million pounds, the license is probably worth about 150 thousand pounds” [Scrapped; stayed as owner]

“Will I clear my feet? 

"Yeah, we came out with something, I mean it was pretty much what we put in, but we came out with something.” [Sold; quit as owner & skipper]

“it was a chance to get out with the decommissioning scheme and the value in the quota, and the days at sea. Financially it made a lot of sense.” [Scrapped; quit as owner & skipper]

“I couldn't see a light at the end of the tunnel so this was a good escape route, sort of cleared my feet and forget about it.” [Scrapped; quit as owner]

“They were looking at it as a mechanism to get rid of an old boat, that there probably was no market for. But their liabilities were such that £250,000 you know, it would have cleared their feet but it would have left them nothing to into the market with to renew.” [vessel agent]

“We've actually come out of it a lot worse off, about maybe £90,000 worse off than when we got the boat” [Scrapped; quit as owner & skipper]

“...it was a way out and we took it. But... out of that money the bills that was lying, I think I wrote a cheque to [X] for £40,000, there’s nothing left out of the £XX, ... there’s nothing to retire on.” [Scrapped; stayed owner & skipper of other vessel]

“I was so desperate to... even being a small amount of debt I think I would have still gone. I’d have just tried to pay it off. ” [Scrapped; quit as owner & skipper]
Figures 1 to 3

Figure 1. Stages in the decision-making process of scrapping a vessel.
Figure 2. Hierarchy of Factors affecting Preferences of Vessel Owners.
Figure 3. Decision Tree for Vessel Owners.
Appendix 1 Glossary of Scots terms used in quotes from interviews (spelling of Scots terms is as given in this paper):

<table>
<thead>
<tr>
<th>Colloquial Scots</th>
<th>English</th>
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