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Reverse Logistics – The Warehouse Ltd. as a Case Study.

A thesis presented in partial fulfillment of the requirements for the degree of

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Abstract

Supply chain perspective identifies with systems thinking, as its emphasis is on holistic management. Supply chain tactics and strategies include decisions on the activities of planning, procurement, production, logistics, warehousing and sales (including returns). Given the differences between forward and reverse logistics, it is important to structure reverse logistics accordingly to derive maximum benefit. Customer returns is a key component of reverse logistics for any retailer. This thesis takes a case study approach to the customer returns processes of reverse logistics, at The Warehouse Ltd. (TWL), New Zealand. The approach is one of description of customer returns related Reverse logistics processes to meet the objective of "what is happening?" at the largest general merchandise retailer in New Zealand. Thus research presented in this thesis relates to an in-depth description of the reverse logistics process. Also presented is an analysis of overall return trends, department levels and grouped data for Jan 06. There is a seasonal trend of peak returns post Christmas and the returns show a decreasing trend. At TWL, the reverse logistics process starts at the returns desk. The customer brings the product to the returns desk at a store, based on the nature of product it may then return to the sales floor or the stockroom. From the stockroom, it may be sent to a repair agent or the reverse logistics distribution center or to landfill. When it reaches the reverse logistics distribution center (RDC), based on the reason of return and the state of the product it is either allocated for landfill, supplier credit or auction. Conclusion, management comments, options and potential further research areas are included.

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Chapter 1: Introduction

1.1 Background to Supply Chain Management

Supply chain management is in the forefront of management attention and is being recognised as one of the most important aspects that differentiates successful organisations from the not so successful.

It has been suggested (Drucker, 1991) that managerial perspectives and horizons are widening and include communication and collaboration, to exploit opportunities and increase value creation, across functions and companies. As such, supply chain encompasses – Sourcing, Manufacturing, and Delivering. Supply chain management essentially provides a focus on the chain of organizations involved, instead of just one organization. It addresses value creation and benefit sharing.

Given the need to integrate processes across organizations, to realise superior products / services delivery, effective supply chain management demands increased information sharing and visibility of activities through collaboration. The purpose is to exploit competencies in the chain and maximize benefits for all members.

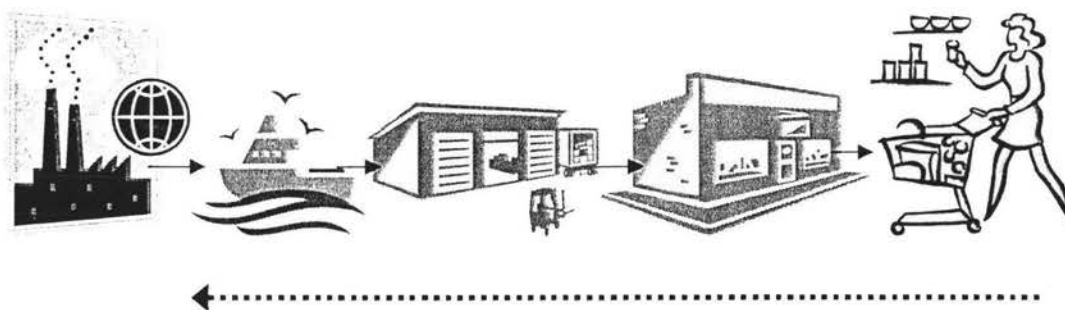


Figure 1 - A typical supply chain

Consider the above depiction of a supply chain (Fig. 1), the arrows in the forward direction from the supplier, through in transit, on to distribution centers, flowing to stores and finally to the customer. The arrows represent “flow” of information, material and money across the supply chain. The dotted line represents returns or reverse flow. Though the depiction above looks linear the flow is not necessarily so, due to the emerging practices of sharing information from an organization to its suppliers, for e.g. the point of sale data from a retailer (customers) may be fed at regular and frequent intervals to an organization’s suppliers to provide real time planning and replenishment.

For a supply chain to be highly successful, relationships between entities should be based on partnerships and alliances, as against traditional supplier - customer (us- vs. – them) relationships. There is an increasing trend for outsourcing and concentration on core competencies, by supply chain members.

Supply chain perspective identifies with systems thinking, as emphasis is on holistic management approach. Supply chain tactics and strategies include decisions (Koch, 2002) on the activities of planning, procurement, production, logistics, warehousing and sales (including returns).

Customer returns is the key component of reverse logistics for any retailer. This thesis takes a case study approach to the customer returns processes of reverse logistics, at The Warehouse Ltd., New Zealand. TWL is the largest general merchandise retailer in New Zealand and has been in existence since 1982, it made a foray into hypermarkets (i.e. including full grocery offer, pharmacy, in-store café and bakery) with its first store at Sylvia Park, in Auckland, which opened in June 2006.

1.2 Supply Chain and its performance

Supply Chain management can be defined as:

"... a set of approaches used to efficiently integrate suppliers, manufacturers, warehouses and stores so that merchandise is produced and distributed at the right quantities, to the right locations, and at the right time in order to minimize system wide costs while satisfying service-level requirements."

(Simchi-Levi D., et al, 2004)

Supply chain management has also been defined as:

"Supply Chain Management (SCM) is the integration of Material, Information and financial flows in a network of companies or organizations that make and deliver products and services from the source to the customer"

(by Hau Lee in Sangam V. K. 2003)

However Mentzer et al. (2001) suggest that Supply chain Management is:-

"... systemic, strategic coordination of the traditional business functions and the tactics across these business functions within a particular company and across businesses within the supply chain for the purposes of improving the long-term performance of the individual companies and the supply chain as a whole."

From these definitions it is clear that one of the key areas to be addressed in supply chain management is adaptation to a system wide approach (global optimization) instead of a local focus. This may represent the challenge of maintaining the product flows in the face of uncertainty due to varying demand

and supply, whilst at the same time achieving the desired service levels and organizational performance. By increasing their focus on supply chain management many global companies (notably Dell and Wal-Mart) have yielded savings and competitive advantages. The issues in supply chain management range from Strategic (1 to 5 years impact), Tactical (a quarter to a year's impact) and Operational (day to day decisions). The issues are to be addressed in the following areas:-

Net work planning (flow of goods for distribution), Inventory control, Supply contracts (Pricing and volumes), Distribution, integration and partnering, outsourcing, make or buy decisions, product design, customer value (need fulfilment and contribution to customers), information technology, decision support systems and reverse logistics.

The flow of goods, information and funds in combination provide value to customers, through effective supply chain management. Walters (2002) noted that no one function can operate in isolation and that intra-inter and extra organisational cooperation is essential. This is common amongst most industries.

A study by D'Avanzo (2003) examined 623 global companies across 24 industries in order to assess performance towards supply chain excellence. The author placed these companies in four categories, based on analysis of financial information over the periods of 1995-1997 and 1998-2000:

Leader (superior performance)

Transformer (improved performance)

Decliner (deterioration)

Laggard (non-superior performance).

The author then went on to assess the company's performance in the areas of:

Inventory turns

Cost of goods sold as a percentage of revenue

Return on assets

The study identified the four key factors that distinguished leaders from the laggards. In particular it indicated that a trait of is that the company viewed their supply chains as critical drivers of shareholder value and competitive differentiation. The companies also endeavoured to incorporate supply chains in their business strategies by building innovation in their operating models and rigorously executing their supply chain strategies. By so doing the companies were able to adapt their practices to meet changing customer requirements.

Without clear performance measures, an organization cannot establish what its core business is and develop a strategy to fit where it wants to develop (Hammer & Stanton, 1995) The availability of past experiences in the form of objective critical measures, linked to clear expectations, provides a picture of the past and leads to motivated, desirable, present and future behaviour. This benchmarking the supply chain (Christopher, 1994) in view of the intense competition requires measuring performance not only in absolute terms but also relative to the competition.

Hammer and Stanton (1995) indicate that performance cannot be overstated, and is linked to measurements of standards and rewards for achievements. Imagine management insisting to employees that the focus of the business is customer satisfaction. People say "Sir, yes Sir" and proceed to concentrate on satisfying customers. At the end of the quarter, management inspects customer satisfaction measures and are satisfied that improvements have been made. Then they ask to see cost figures, which may turn out to be reduced. Typically, the management's response is to demand better profitability.

However performance measures should not be used to merely provide an operational annual snapshot, or a one time improvement effort, rather the effort has to be to continuously increase the capability of the supply chain, in totality (PMG, 2003). This can be achieved through a balanced integration, emphasis on enterprise wide outcomes vs. function level – including customer service, total inventory costs, supplier costs, etc., and key matrices, enough to drive productive action at the same time not too many to result in analysis paralysis, due to information overload.

Measurement of performance in line with the above perspectives helps to identify potential opportunities and provides a balanced view of performance, with both internal and external focus. It is also essential to determine supply chain priorities and targets. The measures can be used for ongoing improvement efforts and the frequency should be at least weekly if not daily, rather than monthly or yearly.

Simchi, et al (2000) summed this up by saying *“Indeed, much of the current interest in supply chain management is motivated by the opportunities that appeared due to the abundance of data and the savings that can be achieved by sophisticated analysis of these data”*.

Supply chain performance measurement is important because it affects behaviour and is the building block for improvement activities (Sangam, 2003). Measures chosen should be relevant, important and monitored real time. A potential balanced score card approach includes measures based on financial, customer, business process and learning perspectives. Most measures include cost, time, quality and revenue. Activity based costing, EVA and value based management approaches are employed by leading companies for performance measurement. Therefore supply chain performance measurement will lead to improvement in supply chain efficiency.

Researchers have identified that the future of supply chains research will involve addressing real problems in real supply chains, developing the theory to support managerial decision making in those contexts (Chopra et al, 2004). Supply chain management, through its integrative and systemic approach, views logistics from a strategic angle referring to an extended organization extending from suppliers, upstream, to customers, downstream (Christopher & Peck, 2003). Sharman (1984) and Shapiro (1984) also emphasize on the integrated nature and strategic importance of logistics. Kulp, et al (2004) highlight the benefits of collaboration and information integration between suppliers and retailers in supply chains.

In today's context of competition between supply chains, the notion that a better coordination of flows between companies improves the performance of each supply chain is relatively well accepted (Morana & Pache, 2003). One of the key "killer strategies" is focusing on and achieving competitive advantage (Stalk & Lachenauer, 2004). In terms of supply chain practices within New Zealand manufacturers, it is noted based on a survey conducted in 1999 (Basnet et al, pg2), that *"The findings suggest that although there is awareness of the SCM concept in New Zealand, the adoption of the newer concepts of SCM is not very far advanced."*

Thus, there is a need to link the focus on quarter to quarter results, to the larger strategic picture, with the aim of creating capabilities of competitive advantage, in turn creating value and thus contributing to shareholder wealth creation (McCarthy, 2004).

1.3 Reverse logistics

The Council of Logistics Management defines reverse logistics as:

"The process of planning, implementing, and controlling the efficient, cost effective flow of raw materials, in-process inventory, finished goods and

related information from the point of origin to the point of consumption for the purpose of conforming to customer requirements”

(Rogers D. S. & Tibben-Lembke R. S., 1998)

Rogers and Tibben-Lembke (1998) further mention that reverse logistics includes all activities of logistics in the reverse flow, i.e from point of consumption backwards and therefore they define reverse logistics as the process of planning, implementing, and controlling the efficient, cost effective flow of raw materials, in-process inventory, finished goods and related information from the point of consumption to the point of origin for the purpose of recapturing value or proper disposal.

The reverse flow emphasis and residual value capture or proper disposal, should be noted from the above definition as being distinct from forward logistics. They highlight that the return percentages for mass merchandisers is in the range of around 4 –15%.

Reverse logistics activities can include:

- Products – Returning returned products to supplier
 - Reselling product
 - Selling the product through specific outlets
 - Salvaging the product
 - Reconditioning / Repairing the product
 - Refurbishing the product
 - Remanufacturing
 - Reclaiming materials
 - Recycling
 - Landfill
-
- Packaging - Reusing
 - Refurbishing

Reclaiming materials

Recycling

Salvaging

Reverse flows may arise from Supply chain partners due to balancing of stocks, marketing activity oriented returns, obsolete or end of season or life cycle returns and returns due to damage in transit. The flow may also arise from end users due to defects, products not wanted, returns under warranty, returns due to recalls, and returns due to environmental and difficulty of disposal concerns.

One important feature is to investigate the strategic use of reverse logistics through, long term impact on the bottom line, ability to facilitate reverse flow being a strategic capability for providing a fresh offer or a wide range offering (eg. music), enhance supply chain profitability and effectiveness, in high churn areas (eg. computer parts) and the strategic uses are facilitated by reclamation and centralised return centers. These can illustrate potential barriers to reverse logistics such as, the relative importance of reverse logistics in the organization, the policy and practice in an organization, robustness of systems, the level of competition pressure, involvement of management in reverse logistics issues, availability of resources and regulatory issues.

Tibben-Lembke and Rogers (2002) discuss the differences between forward and reverse logistics for a retail supply chain, from the perspective of position of the entity in the supply chain and the options available to it. They provide an overview of forward and reverse logistics. Key activities of forward logistics being forecasting of sales, delivery planning into the distribution centers (DC), physical shipments into DC, onward delivery to store, product movement from back dock to store shelves and finally the purchase by customer. The key activities for reverse logistics are mentioned as, returning of product by customer, accumulation of products in store, milk runs to reverse logistics DC(s), sorting,

disposing and decision making and finally delivery of product to destination based on decision.

The position of the entity in the supply chain will determine the scope and level of returns, eg. the retailer being closest to the customer will receive highest returns in terms of variety and volume, this gets reduced down the chain due to segregation along the way. On the other hand the supplier will tend to get the returns in lumps as the retailer accumulated returns. The vendors also receive products from the retailer other than customer returns as highlighted in the above discussion on the origin of returns. Also to be considered is that the supplier may receive returns from different retailers and may have the option of diverting product to other retailers where products are selling faster. Like-wise as the supplier gets an aggregated lump of returns from multiple retailers, remanufacturing becomes a viable option, this may not be as viable for the retailer.

The intrinsic nature of forward and reverse logistics results in differences (respectively for forward vs reverse). These can be summarised as:

Forecasting – easier vs complicated

Transportation – divergent vs convergent

Product Quality – within a band vs a very wide variation

Product packaging – fairly standard vs varied

Routing – specific vs unclear

Channel – standard vs case by case

Disposition – known vs case by case

Pricing – fairly uniform vs varied

Speed – critical vs not considered important

Costs – closely monitored vs lost in layers of activities and not readily visible

Inventory – strict management vs loose approaches

Lifecycle – defined vs case by case

Negotiation between entities – focussed and straight vs varied and complex
Marketing methods – standard vs varied and complicated
Information – nearly real time vs less visible

Such differences mean that it is important to structure reverse logistics accordingly to derive maximum benefit.

For instance, Rogers and Tibben-Lembke (2001) highlight that the speed of deciding and disposing of returned product is critical especially as the residual value is only a fraction of the original value of the product, thus the cost of holding tends to be disproportionately high. This thought is also shared Marien (1998) who mentions that, it is normally thought that an end of supply chain is sale to a customer, however there are many functions performed after the final stage of distribution to the customer. These relate to waste disposal at the customer end and potential of reverse flow at each stage of the supply chain. Increasingly organisations are recognising the reverse flow as an important and a competitive advantage through investment claw back by reuse / recycle, as against solely waste reduction perspective. Approaches to addressing this important aspect of supply chains vary from being proactive to being passive and waiting for regulation to catch up.

Brito and Dekker (2003) suggest a framework for reverse logistics considering, "*Why products are returned*" i.e at reasons for return, "*what is being returned*" i.e materials being returned, "*How reverse logistics works in practice*" i.e processes involved, "*Who is executing*" i.e the entities involved.

Adopting this survey based procedure may facilitate a greater understanding of the complexities of the system. For instance Abukhader and Jonson (2004) provide a survey studying articles linking supply chain practices from an environmental perspective, they highlight that environmental management has been associated strongly with reverse logistics. Geyer and Jackson (2004) have

linked this to the claw-back idea suggesting that, those organizations that focus on recycling and reuse, considering environmental and economic value will be highly successful in the future.

However the method the company adopts to deal with reverse logistics is of great importance. This point was highlighted by Brito et al (2003) who reviewed over sixty case studies pertaining to reverse logistics and conclude that majority of the case studies deal with one aspect of a real reverse logistics situation but they do not give the overall business environment, which make insights sort of one dimensional. Thus, there is a need for conducting more integral case study research, by mapping the business context together with broad information on critical factors, trade-offs and implications.

Chapter 2 Research Methods and Methodology

2.1 Research Methodology

Methodology (Blaikie, 1993) is the use logic, the underlying approach, the framework for conducting research. Thus it underpins the relevant theoretical perspectives considered for research.

Key considerations in the research are Ontology and Epistemology.

Ontology is defined as "*the science or study of being*" (Blaikie, 1993) or also the "*nature of reality*" (Gray, 2004).

Epistemology is the (Blaikie, 1993) "*theory of knowledge; it presents a view and a justification for what can be regarded as knowledge*" or also viewed as "*relationship between the knower (researcher) and the known (phenomena)*" (Gray, 2004).

Knowing through the scientific method entails a systematic process, which is controlled, and is based on evidence. Subsequent related evidence may well, increase, change or expand the body of knowledge (Burns, 2000).

Knowing something is true is necessarily based on facts i.e. (Dane, 1990) "*phenomena or characteristics available to anyone who knows how to observe them*". Knowing and constructing based on our knowledge leads to theory, which is the representation of real phenomena. Does theory really apply to facts is either proved by tests or sound reasoning. Building theory through inductive reasoning i.e. "*process of generalisation*" leads to dilemmas as it cannot readily proved as absolute truth, but it is still useful as the trade off is between starting and populating research or waiting for an abnormally long time for the entire set

of facts to emerge. As an output from an inductive reasoning can be improved and refined in light of new and better evidence, in any case.

Moreover there is also the important consideration of the feasibility of research proposed (Howard and Sharp, 1996), from the point of view of support from stakeholders and the ability of the researcher i.e access or availability of data and information (this however makes it more difficult for other researchers to verify, especially for inductive reasoning), use of a supportive research design, timeline to complete the research, financial constraints.

There are two research strategies (Kelly, 2004) quantitative and qualitative. The ontology for quantitative is based on a singular objective reality, whereas for qualitative it is a reality based on social constructions.

Thus the nature of reality (Gray 2004) for quantitative is "*positivist*" and for qualitative it is "*constructivists*". The logic for quantitative tends to be largely deductive and for qualitative it is inductive.

Epistemology based on the ontology for quantitative and qualitative research tends to follow their underlying notions of reality (Gray 2004). Thus as quantitative research is essentially singular objective based, to ensure un-biased study methods like "survey" are employed. On the other hand as qualitative research being more based on inductive and researcher participation, study methods like "interviews" are employed.

Blaikie (2000) stated that:-

"...to describe is to provide a detailed account or the precise measurement and reporting of the characteristics of some population, group or phenomenon, including establishing regularities."

Case selection (Gray, 2004) for quantitative and qualitative research flows from their respective ontology and epistemology. As quantitative research tests theories by application to data, the case selection or sampling is normally a sample from a population, and rigorous tests are applied to the sample and the results generalised to the population. The sample is drawn randomly and is sizable enough for appropriate statistical tests to be applied and also to fully sufficiently represent the population. On the contrary the sample size tends to be small, sometimes one, for qualitative research, to fully capture complexity and context of the sample and focus is on the richness of data and its impact on building theory. The sample is intentionally selected with a bias, towards the specific level of complexity and the choice of context to be studied. Defining the case yields the boundary and the scope for study, it also provides relevant linkage to the literature review, for the study.

Gray (2004) further states, the choice of single vs. multiple case study is based on considerations of the expected nature of the phenomenon under consideration and also it is essentially a "*trade-off between depth and breadth.*" The choice also depends on whether the researcher takes the approach of "*literal replication*" i.e duplication of expected results of the case, if other similar studies were undertaken, or "*theoretical replication*" i.e. study of different cases to bring out diverse theoretical viewpoints.

Multiple case studies (Eisenhardt, 1991) provide a more rigorous approach and more important the comparison between different settings and thus are superior for generalising as compared to single case study. Single case study is more suitable bringing out the richness in a particular case and a detailed description

The case study (Eisenhardt, 1989) is widely used to "*study dynamics within single settings.....*" and case studies "*typically combine data collection methods as archives, interviews, questionnaires and observations.*" An important shortcoming of case study research is "*that the theorist is unable to raise the*

level of generality of the theory". This is due to the lack of rigorous statistical tests normally associated with quantitative approaches and also since the phenomena under study is context oriented and specific in nature. It is however important and useful as a complementary approach to other quantitative approaches, like survey, and enhances theory by linkages or data to theory as against the theory to data linkage of the quantitative approaches.

Yin (2004) states that a single case study forces a detailed description while multiple case studies provide better generalisations and also there are opportunities of cross deliberations and hypothesis.

Gummesson (2006) states that qualitative approaches allow researchers to deal with "*....complexity, context and persona and their multitude of factors...*" it is further stated that while quantitative research may have an aura of superior validity and reliability, it actually lacks in genuine validity and reliability, as the relationships explored are for a few variables, as against qualitative research which has a holistic and system-wide approach and studies phenomena in their entirety. This can be achieved by addressing the complexity in its fullness, by relating to its context, procedures and roles in the case(s) studied, this in turn is the result of gathering and reflecting on the complete details of the case and grounded data.

The focus of this thesis is to describe the issue or phenomenon (reverse logistics), the objective being "description" and the research design would be case study.

In developing a case study several questions need answering as stated by Bouma (2000). By such methods one is able to the key element of the case study design is that it focuses on a single 'case' or 'entity', which might be a person, one group.

While a single case study has constraints of generalization of research findings, this can be reduced by choosing a typical case (Philliber, et al, 1980), they however provide an opportunity for in depth study of the case and also its context.

Thus an approach that can be taken is one of "description" of customer returns related Reverse logistics processes and considering The Warehouse Ltd., as a case study, to meet the objective of "what is happening?" in terms of customer returns related supply chain practices at the largest general merchandise retailer in New Zealand.

Epistemology would be mixed research with primarily qualitative in nature, supported by quantitative descriptive data and the research strategy aimed towards, locating a specific pattern within known and general patterns, in terms of specific reverse logistics processes at TWL. The focus is on customer returns material flow aspects.

2.2 Research Methods

Research methods (Blaikie, 1993) are the actual tools and techniques used during research.

The following methods were used:

Interviews

Interviews were conducted across locations, departments and functions. The interview format was semi-structured, starting with what is the scope of the activity or process or task, and following on to subsequent steps, including the inputs required, outputs, information needs and hand off to another team member.

Archival Documents

These were accessed to gather procedural data and also to identify the locations and team members to be interviewed

Observations

The research is based on direct observation during visits at actual activities taking place and recording of data.

While the primary objective is to describe the customer returns related reverse logistics processes and procedures, by qualitative research. Through a special permission, the data warehouse was accessed and for Jan 06 customer returns data, a graphical analysis by department is presented, including grouped and aggregated data. Archival point of sale data records were accessed for total year on year trends and also used for Seasonal analysis.

2.3 Data Reduction

The method employed (Gray, 2004) for qualitative data reduction is based on Dey's process of describing, classifying and connecting.

Description relates to providing a comprehensive outline and overview of the data. Also critical as a part of describing is to maintain a completeness and to facilitate insight and analysis for the case. A descriptive summary most importantly highlights the context of the case and the data can thus be related to the context.

Classification is the categorisation of data, thereby splitting the described data into logical groups, these could be based on the particular case or aligned to literature review. A necessary step in classification is the definition of the categories.

Connecting refers to the setting of relationships between categories by making their linkages explicit.

The describing – classifying – connecting process is a process yields a complete result of the case, explicitly identifying the relationships between categories.

Microsoft Excel has been used for analysing (Runiyar, 2004) and depicting in graphical and trend forms. The data warehouse query output was exported to excel and functions like sub-totals and pivot tables were employed.

Chapter 3 The Company Overview

3.1 Background information on The Warehouse Ltd., New Zealand (TWL)

The following overview has been adapted from The Warehouse Ltd. Website www.thewarehouse.co.nz. The Warehouse New Zealand (also called Red Sheds) had sales of \$NZ 1.5 billion and operating profit of \$NZ 139.0 million for the year ended 31st July 2005.

The Warehouse Group includes 85 Warehouse NZ stores and also 43 Warehouse Stationery stores. The Warehouse is one of New Zealand's largest retailers of general merchandise and has been in existence since 1982.

Core Purpose & Values - The Warehouse New Zealand Values:

Where Everyone Gets A Bargain

Where People Come First

Where The Environment Matters

The journey from 1982 till date...

1982 – The very first TWL store in Takapuna, Auckland starts business.

1990 - First nationally distributed advertising mailer

1991 - Sales exceed \$100 million

1992 - Public float and listing on the New Zealand Stock Exchange

1995 - The Warehouse added to NZSE40 index

1996 - Opening of North Island Distribution Centre

1997 - Introduction of the first store of 75,000 square feet (6,967m²)

1998 - Introduction of apparel as a major department

2000 - Sales exceed \$1 billion

- 2001 - First Triple Bottom Line Report produced
- 2002 - The Warehouse celebrates its 20th Birthday!
- 2003 - Opening of new South Island Distribution Centre
- 2004 – Shanghai Direct Sourcing Office opened
- 2006 – The first hyper market store opened at Sylvia Park, Auckland

3.2 TWL Strategic Objectives

TWL strategic objectives, as highlighted in The Warehouse annual report (2005) are:

1. **Sourcing great product:**

Sourcing great product relates to providing sufficient choice, on-shelf availability and value for money.

2. **Developing our brand:**

Developing our brand relates to the refreshing the logo (changed recently), EDLP (everyday low pricing) reinforcement, changes in mailers and advertising.

3. **Leveraging our supply chain:**

Leveraging our supply chain relates to twin fold focus on increasing availability and stockturns, through “sweating” the supply chain assets (DCs). The aim is to pass on the benefits derived from increasing efficiencies to customers.

4. **Improving our stores:**

Improving our stores relates to the focus on increased customer service, enhancing the shopping experience through format changes (eg. The newly launched format at the Te Rapa store), checkout queue busting, competency improvement of store team members and making it easier for stores to execute.

3.3 TWL - Forward logistics overview and Distribution Centres

TWL has instigated a country wide logistics policy to deal with product purchasing, selling and returns. The forward logistics process starts with a decision to buy a product(s), this may come about through an identified product (to match a competitor offering, or to broaden / refresh range) or through a supplier or trade fair visit. At this point, specific product requirements are discussed and negotiated with the supplier by the buyer, these include specifications, packaging, order mins., pack sizes, channel of supply FIS (i.e. Free into Store) / FOB / FID (i.e Free into Distribution Centre), ordering method i.e auto reorder or manual (infrequent – need based), and of course the price and payment terms.

Purchase orders are then placed with the supplier, all overseas orders are received in the distribution centers (DCs) and local orders have a specified delivery to the DCs or direct to store. TWL has two DC sites for forward logistics, North Island Distribution Center (NIDC) NIDC processes general merchandise, apparel and grocery range for the North and South Island stores. South Island Distribution Center (SIDC) processes part of the general merchandise range for the south island stores. The total cartons processed by the DCs for FY06 are as follows:-

NIDC - 12.4 million cartons

SIDC - 2.6 million cartons

Replenishment from the suppliers and distribution centers is through a mix of push and pull methods. All overseas ordering is through push method, in the sense that orders are placed on judgemental forecasts, and all routed through the DCs. Initial allocations to stores are also push based, supported by a pull based replenishment based on sales. Local ordering is based on a mix of pull and push. Pull ordering is based on calculated rate of sale and considering replenishment lead times. Replenishment times from the DCs vary from 1 day (eg. Auckland Stores from NIDC) to 7 days (eg. Invercargill from NIDC). Push ordering for local is again based on judgemental forecasts. However, local replenishment is largely pull oriented based on auto reordering as against overseas which is push oriented. Replenishment within the DCs can be distinct from the ordering method, products putaway in the DCs have an element of pull based replenishment as against products that tend to be cross docked in cases of overseas orders.

3.4 TWL – forward logistics overview in-store focus

In store, all deliveries arrive at the stockroom, where they are receipted and stacked for onward process of in-store merchandising. The movement of products to respective shelves/aisles, in store happens mostly at night, this is executed by night-fill teams. During the day replenishment is only for items with high rate of sale as compared to their shelf capacity, eg. gas bottles during season or stationery during the back to school promotion. Customers finally execute the last leg of the forward journey, of products from the shelves to the checkouts, and out of the store. The forward logistics aspects of TWL provide an opportunity for future research from a value chain or an alternative perspective.

While a detailed description of customer returns processes at TWL follows later in this thesis, it is worth noting that the end of forward logistics is the stage where the customer takes the product out of the store. This contrasts with the situation

for reverse logistics, where the customer bringing the product into the store is the first step of the process.

Chapter 4 Customer Returns - Processes and Data

4.1 An Overview of the TWL Returns policy

Policy and Procedures for returning products to The Warehouse New Zealand (accessed from TWL website, 24.02.06)

Policy

While the Consumer Guarantee Act and Fair Trading Act provide the basis for The Warehouse's returns policy, we have a policy which is 'above and beyond' the expectations of these two statutory laws. The Warehouse has a 12-month money back guarantee with printed proof of purchase (e.g. till receipt etc). It is this policy that provides faith in the company for many of our customers.

NOTE: Because of copyright or hygiene issues a refund or exchange is only available for the following products if the product is defective;

- Music CDs
- DVDs
- PC Software
- Gaming Console Software
- Hygiene items (such as earrings, underwear etc.)

NOTE: These products are still guaranteed under the Consumers Guarantees Act.

Consumer Guarantees Act 1993

The Consumer Guarantee Act sets out minimum standards for goods sold by The Warehouse Ltd. In the event that goods sold are not of good quality or are faulty, the customer has the right to a repair, replacement or a refund.

Fair Trading Act 1986

The Fair Trading Act is designed to protect the customer being misled, either intentionally or unintentionally. This applies to all aspects of the promotion and sale of goods and services including: pricing; where the product was made; where the product is from; the meeting of New Zealand safety standards;

availability of products in store and the sales techniques used. The Commerce Commission enforces the Fair Trading Act 1986.

Procedures

There are five options available for our customers who would like to return a product –

1. Exchange

If a product is unsatisfactory, we can offer to exchange it for another one (i.e. a different size or colour etc) or another product of the same value. Generally proof of purchase is required in order to get an exchange, although we may waive this requirement if we believe we have sold the product. Please note, as mentioned above, exchanges are not available on CD's DVD's, software and hygiene items, except where the product is deemed faulty.

2. Money Back Guarantee

Our money back guarantee is a key aspect of our business. If a customer has proof that they purchased the goods from our stores within the last 12-months, and providing we cannot repair or replace the item, they may obtain a refund. A refund will be made in the same tender as the original purchase. Please note that purchases made by cheque need 7 days to clear before we can refund. Please note, as mentioned above, the money back guarantee does not apply to CD's DVD's, software and hygiene items, except where the product is deemed faulty.

3. Credit Note

The issuing of credit notes provides an alternative to a refund or exchange. These credit notes can be used to purchase anything from any of The Warehouse New Zealand stores. Credit notes can not be exchanged for cash and will not be generated for amounts less than \$5.00.

4. Application for Refund

An application for a refund will be required where the original purchase was made by cheque less than seven days prior to the refund claim, where the original purchase was made through a WINZ Purchase Authority, or for products that require a further inspection prior to a refund being granted (e.g. computers, diamond jewellery etc).

5. Repairs

If the returned product is still under warranty then the repair will be at our expense. If the product is out of warranty, then we can still have the product repaired, however, the cost of the repair will be charged to the customer.

4.2 Customer Returns Processes

**CUSTOMER RETURNS
PROCESS OVERVIEW**

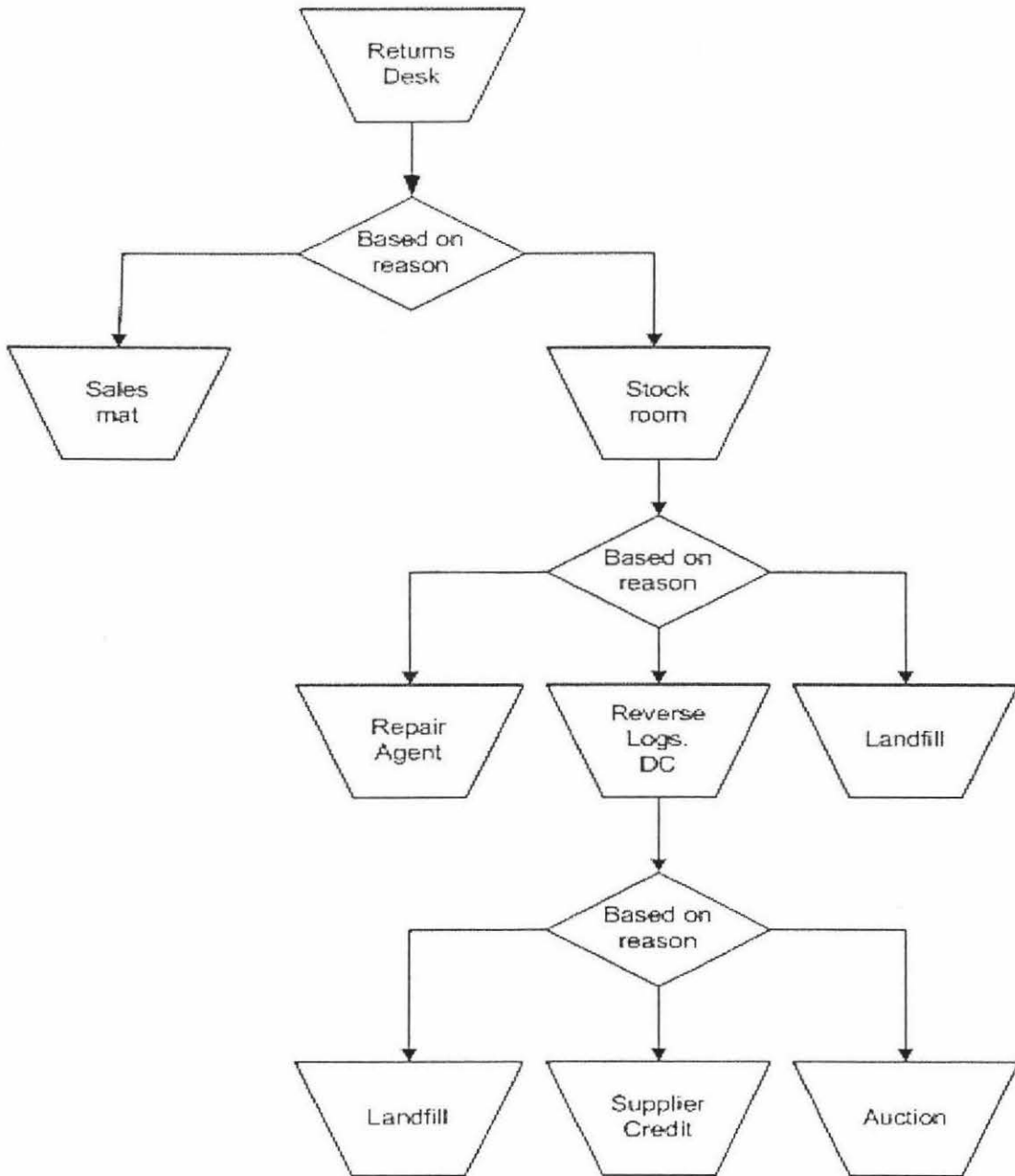


Figure 2 - Customer Returns Process - Decision Flow

As depicted above (fig. 2), the decision flow is as follows:

Event 1 – Customer returns product at returns desk at a store.

Event 2 – Based on the return reason, the product and the state of the product / packaging, the product is either/or:

- a) Placed on the Sales mat (i.e sales floor)
- b) Returned to the stockroom.

Event 3 - In the stockroom, based on the reason of return and the state of the product, it is sent to one of the following:

- a) Repair agent
- b) Reverse logs. (i.e. Reverse logistics distribution center, also called PRDC)
- c) Landfill

Event 4 - When it reaches the reverse logistics distribution center (PRDC), based on the reason of return and the state of the product it is actioned as follows:

- a) Landfill
- b) Supplier Credit
- c) Auction

It should be noted that if a product is returned to the sales mat it gets resold from the sales mat normally at a discount unless the packaging and the products are intact. In case of repair it is returned to the customer post repair. The repair process is further elaborated under the detailed discussion in the “Stores” section.

4.3 Stores Processes

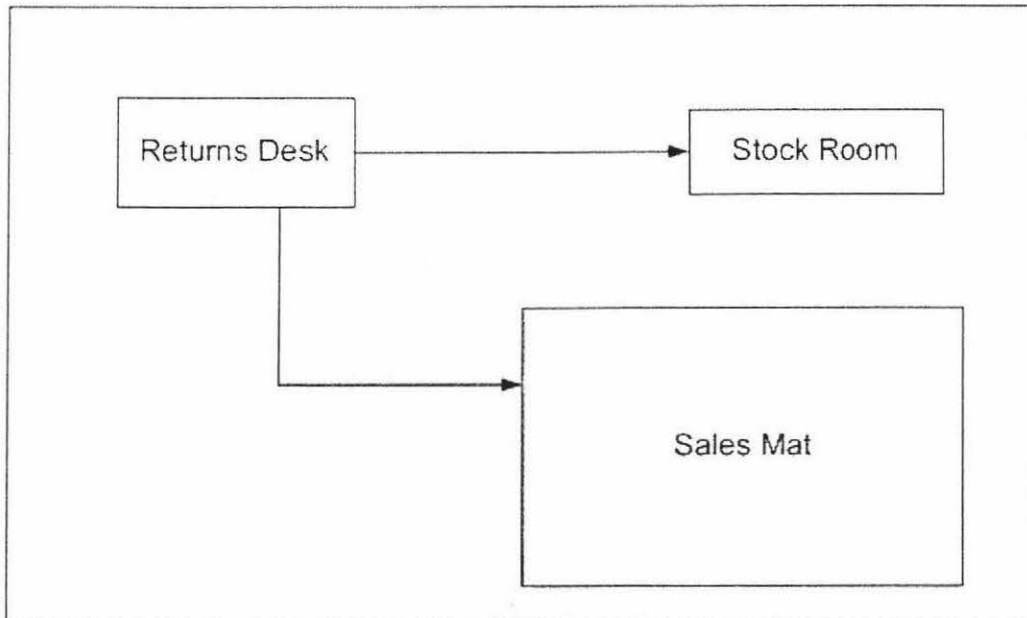


Figure 3 - In-Stores Product Flow

The above figure shows the areas involved within stores for customer returns:

Returns Desk

Sales Mat

Stockroom

4.3.1 Returns Desk

The product is returned by a customer at the returns desk. As soon as the customer enters the store there is a sign requesting that the security guard be contacted and informed before entering the store. The guard then guides the customers to a returns queue by the returns desk.

The decision elements of the process at the returns desk are based on whether the customer has the original purchase receipt, the duration of time the product has been held by the customer, does the customer wish for:

Repair

Refund

Swap

It is required that the customer has the original docket as proof of purchase, also if the product is not purchased recently, the product is sent for repair or swap if possible as against a refund, in case the product cannot be repaired or swapped (either the customer is not keen or product not available) a credit voucher equivalent to the amount of purchase is given. The product is struck out from the original docket. In cases of no proof of purchase, and if the product barcode scans in the system, a credit voucher is given.

In cases of swap, the returned product is kept at the returns desk for further processing and the customer is sent into the sales mat to bring another identical product, which is then verified and the customer is allowed to leave the shop with the swapped product.

The returns desk team member verifies on the POS (point of sale) system, whether the product can be repaired. In cases of repair a "Request for Repair / Replacement form, uniquely numbered, is filled in duplicate, the top part is stuck to the product, the bottom part given to the customer and a copy is retained on returns desk. The form includes customer details (name, address, phone no.), Product details (description, retail price, within warranty or not, quantity), there is space on the form for action taken (repair completed, replacement received, credit request completed, other) and a brief description of the repair issue. The returns desk ask call the supplier / agent to confirm that the product should be sent for repair, In case the product cannot be sent, the form is processed for

customer credit, the customer is called and receives a refund. Otherwise the product is sent with a copy of the form to the stockroom. The stockroom sub-process for repairs is covered under the Stockroom section. In case the product cannot be sent, the form is processed for customer credit. After the product comes (through the stockroom) from the repair agent (or a decision to credit), the customer is called to collect the product. When the customer arrives with the copy of their form, the product is handed over and customer is requested to sign on the form, as proof of receipt. In case the customer does not come to collect the product for more than three months, the product is marked down and put back on the sales mat.

In cases of refund the customer is credited by the mode of purchase, eg. if the purchase was through credit card, the refund is also done on the customer's credit card. The reason for return is entered with a brief description (refer data section for possible entries). The customer is requested to supply a copy of the refund docket, three copies of the refund docket are printed one each for, product, file and customer. On the following day the store administration team print out a "Refunds>Returns report" and randomly call a few customers to confirm that refund has been received and also ask informal questions on the level of customer service at the returns desk.

Products thus received from customers are checked for options against the product on the system and sent to –

- a) Products which are not "as new" due to missing parts, packaging or defective in some respects are stuck with a pink sticker "Seconds Product" and put on Sales mat.
- b) Products which are near new and have packing intact, are placed on the sales mat at normal price. Mostly in cases when the product is returned within a day and the reason of return is not suitable, change

of mind etc. These instances are mainly due to the relaxed “moneyback guarantee” slogan of TWL.

- c) Products to be sent to repair agent are sent to stockroom.
- d) Products which are damaged, or cannot be resold, repaired are sent to the stockroom.
- e) Products which are to be credited from the supplier are sent to the stockroom.

Products going to the stockroom have return action specified on them, i.e repair (products have repair form attached), supplier credit (product has return for credit written on it or packaging), Write-off (product has orange “Written Off” sticker on it, with date and name of team member taking decision), supplier credit, transfer to reverse logistics, landfill and write-off products are sent to Reverse Logistics Distribution center, at Puhinui Road, in Auckland (PRDC). Only products which are accepted by the returns desk at the front of the store and those which have not been put back on the sales mat, are processed by the stockroom.

4.3.2 Sales Mat

Returned products on the sales mat are either on normal price or are marked down as “Seconds Product” . If a product has been placed as seconds it has a pink sticker, with the following details on the sticker:

Seconds Product

Note: No refunds on this product

\$ Original Price

\$ Reduced Price

Reason for Reduction

Date

This sticker cannot be removed

Products sold as seconds are thus cleared at a reduced price.

Products which are intact and recent returns are placed on the sales mat for being sold at the normal retail price, however there are few instances of these.

4.3.3 Stockroom

The products received for repair are managed through an "Inward / Outward Repair Sheet". Details from the repair form are entered on the sheet, the product is packed suitably for courier, the courier company is called and product despatched to the supplier / agent for repair. When the product is received after repair, it is entered in the sheet, including the receipt date and the product is sent to the Returns desk. An example of the sheet used follows:

INWARDS / OUTWARDS REPAIRS

REPAIR AGENT	REPAIR DKT #		CUSTOMER	DESCRIPTION OF GOODS	DATE SENT / RECEIVED				CARRIER
	TWIL	CUST PHONE			OUT	BY	IN	BY	
ORIENTAL		223068	P. HILL	T/SONIC DVD PLAYER	12/01	VM	13/01	VM	
NEXT		223064	S. SLADE	TV 21" SANYO	12/01	VM	12/01	VM	
TELEPHONICS				M PHONE	13/01	VM			
ORIENTAL		223067	P. SINGH	T/SONIC DVD PLAYER	13/01	VM			
"		223069	A. CHESTNUT	" " " TC CASE	13/01	VM			
C JAYS		223056	S. REID	SANYO VCRUM SC505NZ	13/01	VM			
SIS BIKE RECD		218199	P. MASAGA	MTB 24" TURBO BIKE	16/01	VM	15/01	VM	
NEXT		172344	P. HEITHEI	21" TV COBOLT CB211	17/01	VM	17/01	VM	
FIXTRONICS		22671	K. HALE	SINGSTAR 80's	17/01	VM			
C JAYS		223070	E. HEIXABLE	VCRUM C/DE 1400W	17/01	VM			
" "		172343	H. KOHI	" HOWER BAGLESS	17/01	VM			
FIXTRONICS		22673	SHANE ALI	PSP CONSOLE PACK	18/01	VM			
NEXT		223072	P. EDILINDO	M/WAVE .17/LITRE S/STEEL	20/01	VM	20/01	VM	
C JAYS		223074	PAUL	C/CADRE COMET VCRUM	23/01	VM	23/01	VM	
ORIENTAL		223073	N. SINGH	SEWING MACHINE	23/01	VM			
NEXT		223075	AGCHA	TV 20" T/SONIC	25/01	VM			
"		223076	SUSHILA	VCR SANYO	25/01	VM			
CUSTOMS FLEET		223059	BILLY	CUSTOMS CD PLAYER	03/02	VM			
NEXT		223084	K. KUNAL	TV 29" COBOLT	01/2	VM			
"		223082	M. FARUKI	7" SLOT IN DVD	01/2	VM			

Figure 4 - Stockroom: Inwards - Outwards Repair Sheet

Products received from the returns desk have returns action on them, those products which are totally unusable / broken are thrown in respective (clothing, metal, plastic, paper, etc) rubbish bins for landfill (this is subject to \$ 20 limit if a product is grater than \$ 20, it goes to PRDC, also dangerous goods, such as gas bottles / electrical heaters etc, are compulsorily disposed through PRDC). If some products do not have a return action, the stockroom team member, scans the barcode with the RF gun and determines the return action. The options available at the stockroom are:

- Recycle
- Write-off
- Return to Reverse Logistics
- Landfill
- Transfer to Reverse Logistics

Except for the last option, all products are kept on a write-off pallet and all products for transfer to reverse logistics, including products for supplier credit are sent kept on a "Transfer pallet" each product has a transfer number. The list of transfer numbers in the pallet is attached to the pallet / stillage. Thus products are sent to PRDC on two distinct channels – write off and transfers. As the pallets / stillages get full, they are shrink wrapped and sent to PRDC.

4.4 Reverse Logistics Distribution Center (RDC)

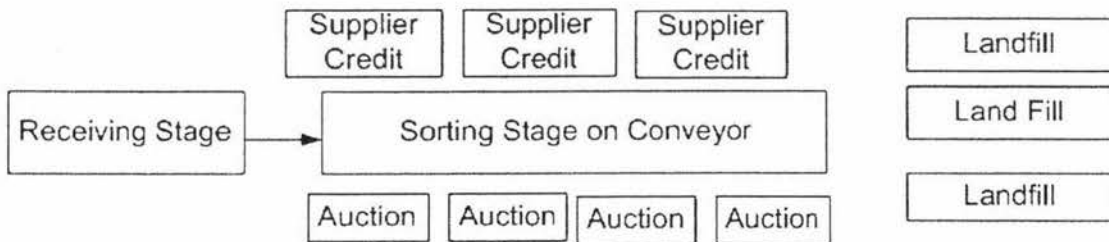


Figure 5 - Schematic representation of Reverse Logistics D.C.

As observed in the earlier section (4.3.3) pallets / stillages are received under two channels "Transfers" and "Write-off".

4.4.1 Transfers

Pallets are received and set aside for processing in the receiving stage. The list of transfer numbers is used to print out the transfer notes, these are then attached to respective products. Products are then placed on respective supplier pallets, and as pallets get full they are sent to suppliers for credit. Products sent to the supplier are accompanied by a "Request for Credit / Debit Note", this also acts as a packing slip cum invoice. The details on the note include:

Credit note number

Supplier name and address

Date

Reason

Comment

Barcode

Description

Unit cost

Quantity

Total Cost

A copy is sent to the Accounts Payable department and a copy retained at PRDC.

4.4.2 Write-offs

(Ref. Fig 4)he layout above the products are received in the receiving stage. The pallets / stillages are then brought to the receiving end of the sorting stage one at a time. On one side of the sorting stage are pallets by supplier to hold products

for supplier credit and on the other side are stillages, for auction categories. Products are placed on the conveyor and there are team members on either side of the conveyor who pick products and place them in the respective pallet or stillage. The conveyor moves at a slow pace, allowing time for sorting, the sorting speed is also regulated by the placement of products on the conveyor. At the end of the conveyor are drums and bins for land fill products.

The products for supplier credit are identified by the team members, through return action on the product put either at returns desk or stockroom, or by experience, in cases they are not sure, RF guns are used to identify the supplier and return action, i.e. whether credit is possible at all or are landfill / auction the only options. Once the pallet for a supplier is full, it is stored in the racks and despatched with the "Request for Credit/Debit note".

Auction products are those that can be salvageable or repaired and resold, there is an agreement with one agency to pick all the products by categories in respective stillages / pallets, and there are fixed charges which the agency pays for each of the following categories:

- Quality Electronics (eg. Exercise machines)
- Electronic and Components (eg. Stereos, DVD players)
- General Electrical (eg. Appliances, Microwaves)
- General Mixed Goods (eg. Hard Goods, Apparel)
- In complete (Boxed Furniture)
- Salvage (Broken)
- New Products (Whiteware).

At the sorting stage those products which are not supplier-creditable and not fully damaged, are segregated in respective auction pallets to be picked up by the agency. Though the price is fixed per load for a category the process is called auction for historical reasons. The auction pallets are picked twice a week.

Residual products which cannot be placed on either supplier or auction pallets are then placed in the respective drum / sack at the end of the conveyor for landfill. These are segregated as Clothing, Glass, Plastic, General etc. Land fill containers are then unloaded outside the building area in respective bins, which are cleared weekly.

The priority for return action is Supplier credit first if possible, followed by auction and then lastly land fill.

4.5 Returns Data from TWL stores

Returns data is discussed in Chapter 5.

The following pages depict overall month by month data, at the stockroom stage from Aug'03 to Feb'06. Also derived is a trend for the corresponding period. The detailed by department returns reasons (Jan'06 data) are depicted in Appendix A. The difference to 100% is due to blank i.e no reason entered. The departments are further grouped in business areas, to enable department analysis of identical areas, this is depicted in this section, the grouping is as per the following table:

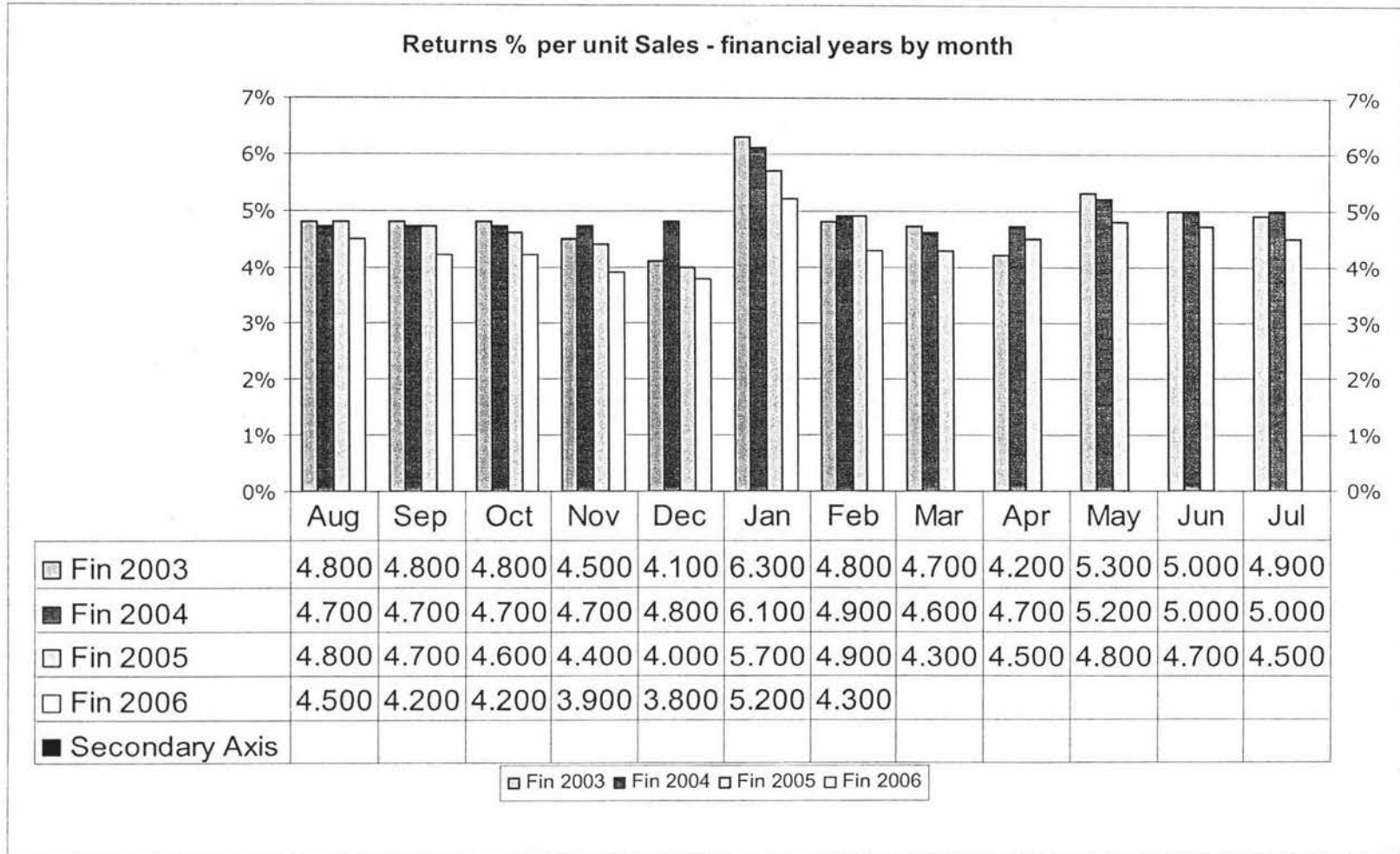


Figure 6 - Returns % by month

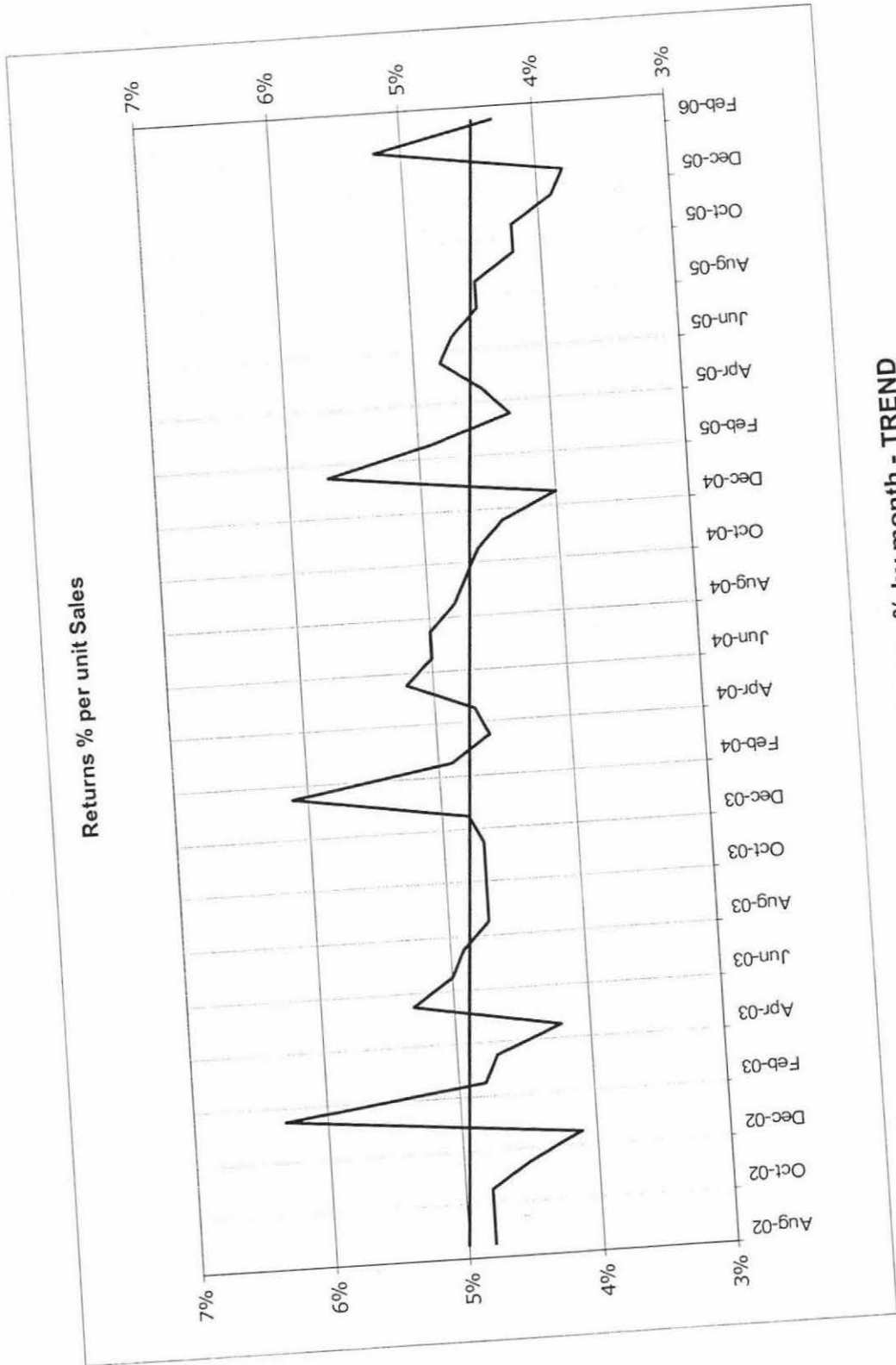


Figure 7 - Returns % by month - TREND

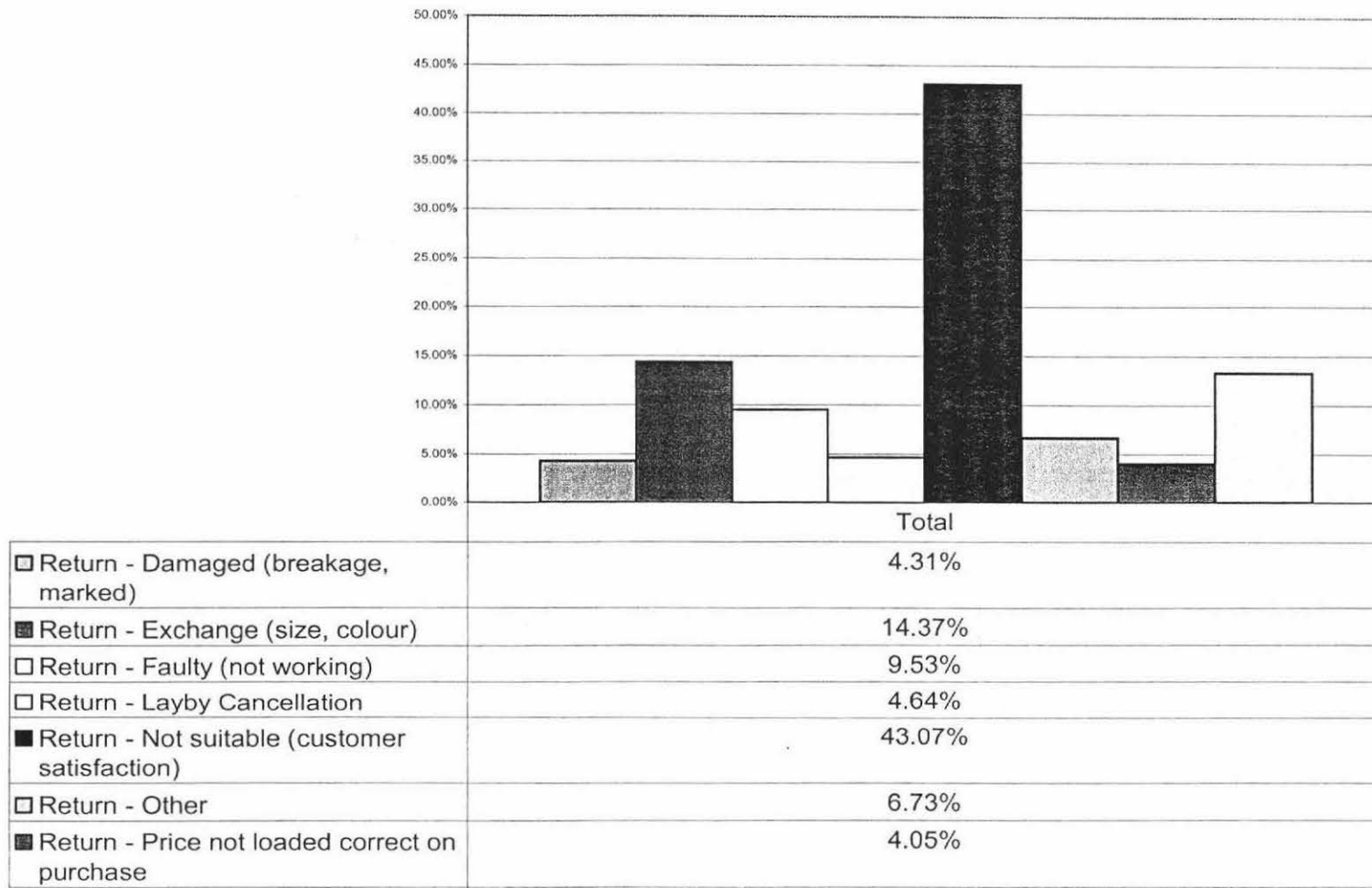


Figure 8 - Breakdown by Returns type – All Departments

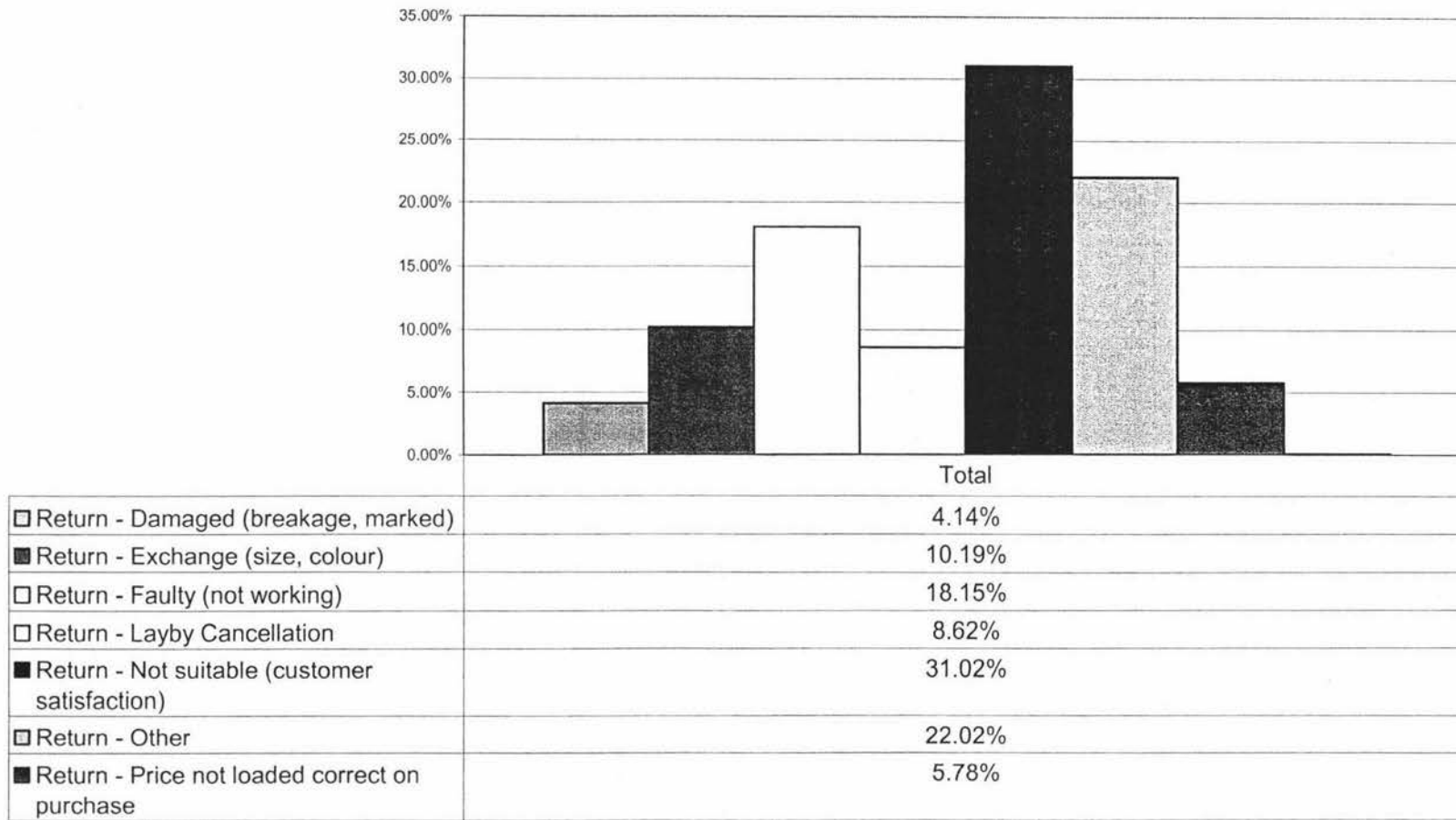


Figure 9 - Breakdown by Returns type – Entertainment and Technology

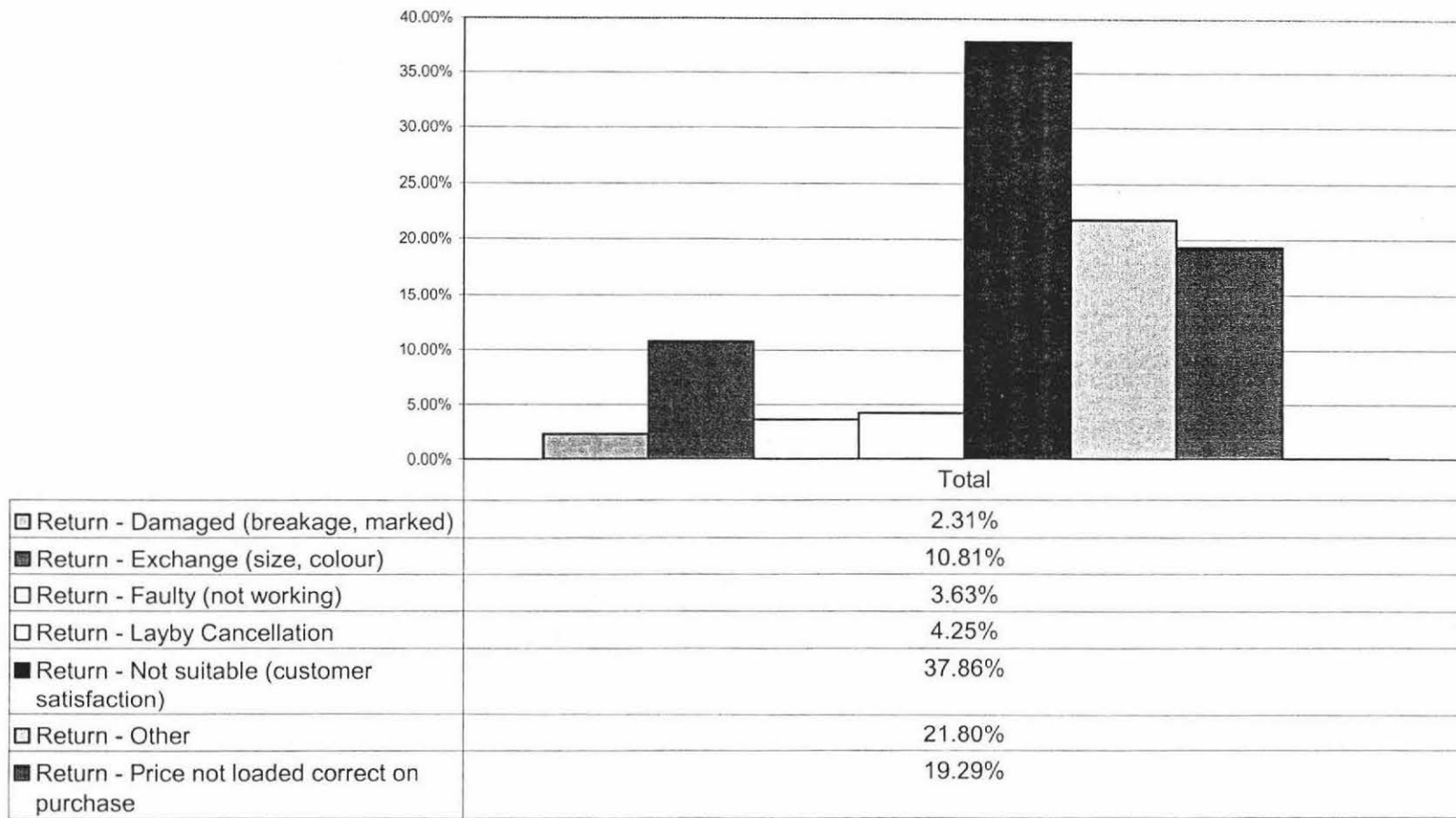


Figure 10 - Breakdown by Returns type – Grocery

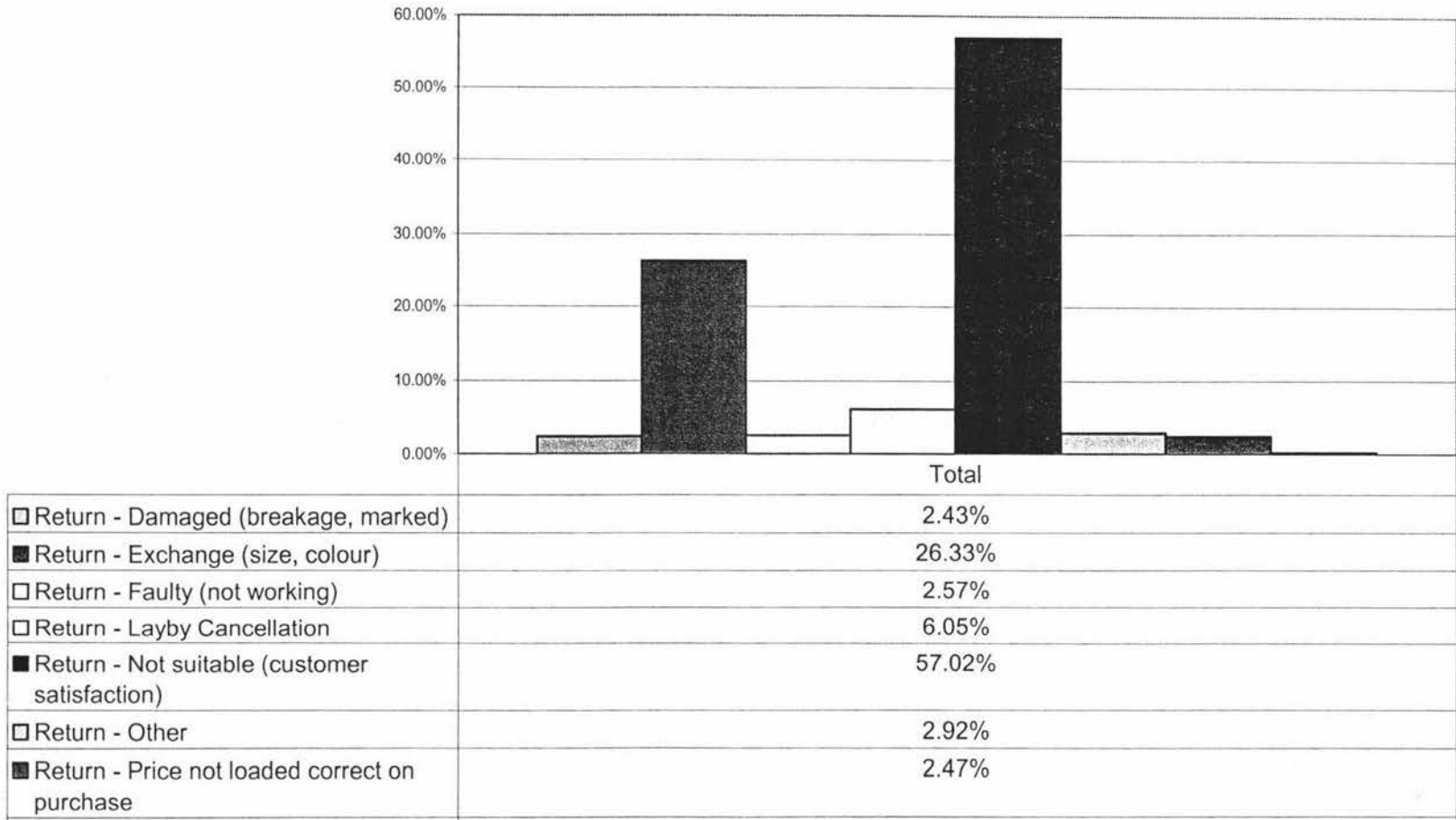


Figure 11 - Breakdown by Returns type – Head to Toe

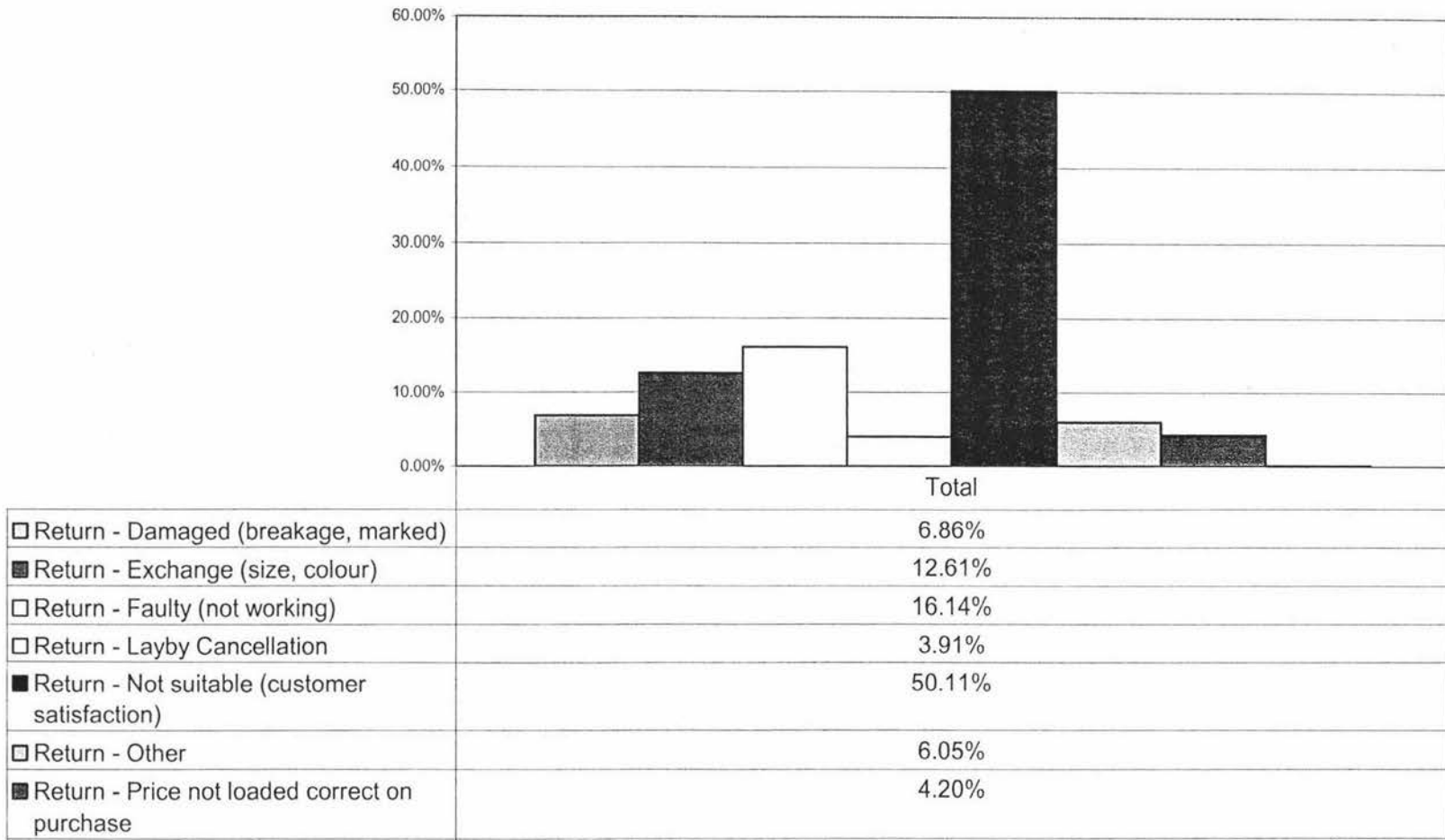


Figure 12 - Breakdown by Returns type – Home

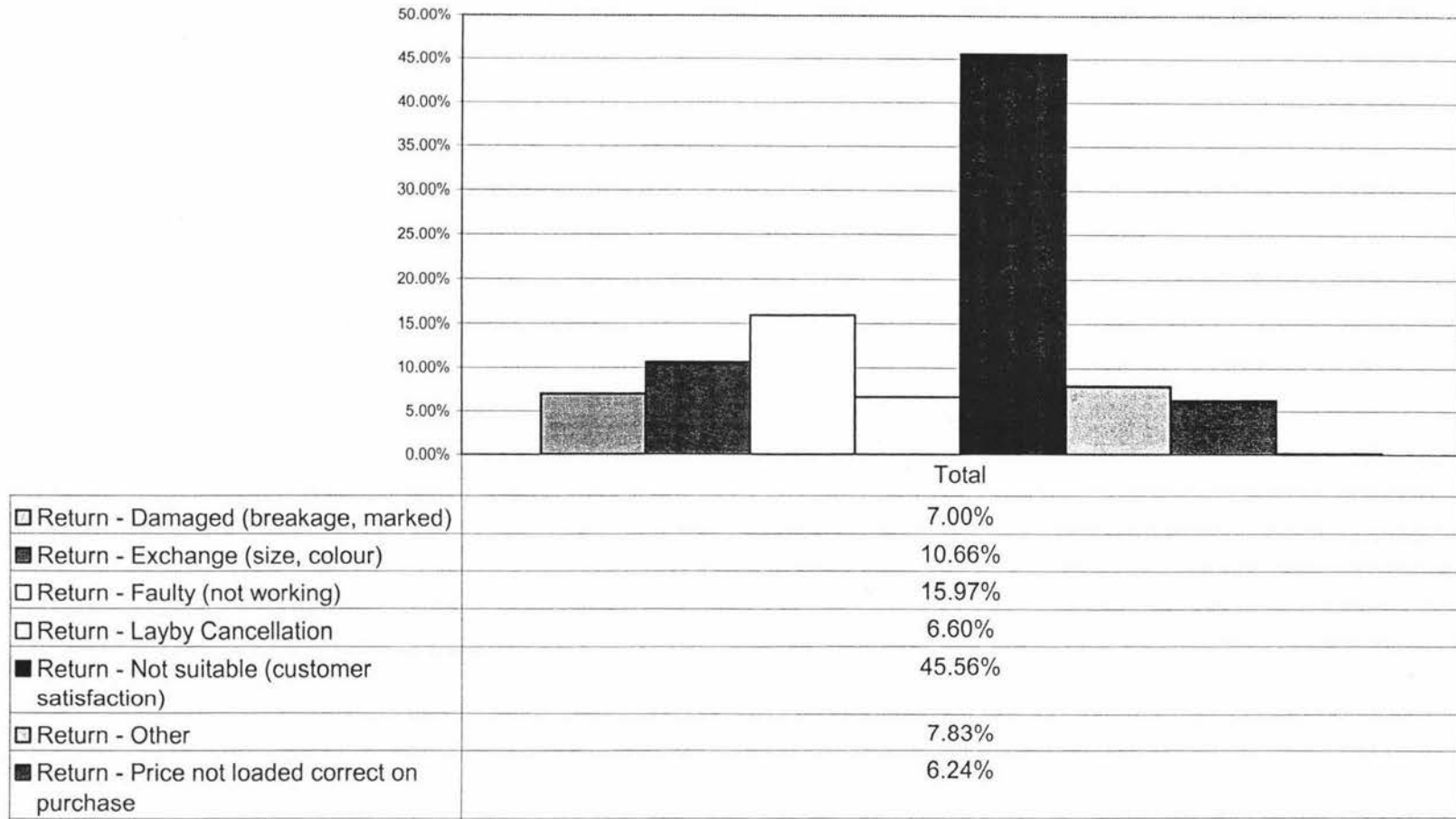


Figure 13 - Breakdown by Returns type – Leisure

Chapter 5 Discussion and Conclusions and Future research

5.1 Overall Material Flow

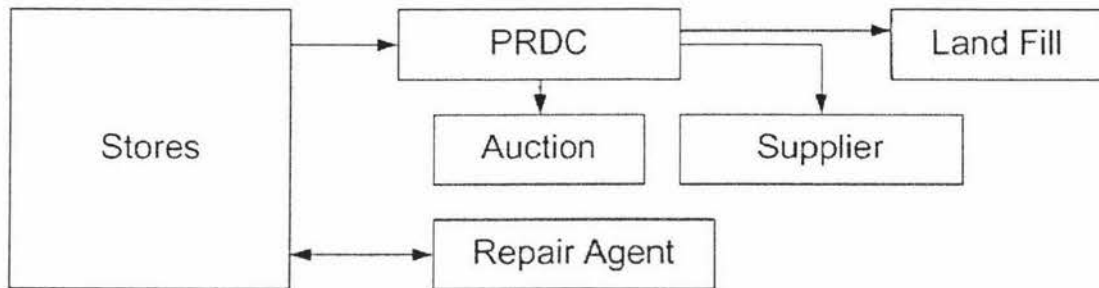


Figure 14 - Material Flow Overview

As illustrated in the figure above the overall material flow is initiated at the store by the customer at the Returns desk. The critical decisions in most cases are made at the returns desk, as to whether there would be refund or repair and in some cases refusal to accept return. The returns desk also determines whether the product will be placed on the sales mat for resale or sent for repair or to PRDC. The product is resold normally at a markdown from the sales mat. The return action i.e write off, supplier credit, is also determined at the returns desk. Thus the bulk of decision on product flow and markdown happens at the returns desk. Follow on decisions occur either at the stockroom or PRDC. The priority for allocation of products is in the following order: supplier, credit, auction, and landfill.

As can be observed from the graphs depicted in the Processes and data section (Returns Data – 4.5):

The largest volume of returns in every year is in January, as evident from the following table, this is due to the follow-on from the Christmas sales, thus the returns peak, post the Christmas Season.

MAX	FY03	FY04	FY05	FY06
Returns % to unit sales	6.3%	6.1%	5.7%	5.2%
Month	Jan	Jan	Jan	Jan

Figure 15 - Seasonal Trend: Max Month - Jan

The overall trend of customer returns as a % of sales units over the years is on the decline.

Departmental data (Appendix A) reveals that in almost all areas "Not Suitable (Customer satisfaction)" accounts for the highest return reason.

This is also correlated to the groupings, by business area, as "Not Suitable" is also by far the largest cause of returns.

The key underlying cause of not suitable returns is the often emphasized TWL slogan of money back guarantee.

Further, this is compounded by the lack of identifying the correct reason for return, or confirming customer comments, eg. appliance not operating satisfactorily.

There is also a relaxed and non-hindering behaviour with customers at the returns desk, to support the money back guarantee. The returns by grouping for the data (Jan 06) follows in the descending order (fig. 16):

Grouping	Jan 06 % Return over Sales \$
Leisure	6.3%
Home	6.2%
Head to Toe	4.5%
Entertainment and Technology	2.8%
Grocery	0.7%

Figure 16 - Grouping Ranked % Returns for Jan 06

Whether there is a trend over time in line with total returns for respective groups, and whether the peaks match those by total return, require further and ongoing data mining, tracking and analysis. This will also help stores in coping during peak periods. Inter category differences can also be addressed accordingly.

It should be noted that, while the overall process is ingrained, there is a need for a robust decision tree for writeoff / landfill and markdown decision, including the extent of markdown. Also important is the alignment and continuous update of data to reflect current supplier credit arrangements with suppliers, this will also highlight the need for negotiation with those suppliers which are not creditable. There is a need identified to integrate TWL returns policy with the relevant sub-processes especially at the returns desk, thus ensuring a fairly consistent customer response. Higher visibility of product flow from returns desk to match the material flow will provide an opportunity to measure the volume and extent of commercial loss, also enabling appropriate charge back of processing cost to the supplier in addition to the product cost. The above actions will also help identify the ownership of the overall reverse logistics processes. The time element tracking i.e. original purchase trends and returns lag, is not visible.

TWL (The Warehouse Annual Report, 2005) is a pioneer in NZ for environmental friendly practices and "sustainability" philosophy, a decreasing rate of returns enhances this focus area and improves brand image.

5.2 Strategic Objectives Perspective

It is critical to reflect, in addition to above comments, on the customer returns processes from the point of view of strategic objectives. Aspects of strategic objectives related to customer returns are highlighted below:

Sourcing great product:

Essential for adequate product performance are, fitness for use and customer satisfaction from using the product, thus a great product will have lesser returns. Sourcing needs to consider returns as an important product / supplier selection factor. This should also be addressed during supplier communications and negotiations.

Developing our brand:

Refreshing the logo (changed recently) – returns process handling helps reinforce the logo and the slogan “where everyone gets a bargain” through satisfactory processing at the returns desk.

EDLP (everyday low pricing) reinforcement – fewer returns and an efficient returns process would enable more benefits being able to pass on to customers.

Leveraging our supply chain:

Increasing availability – customers returns reduce on-shelf availability especially in cases of long replenishment lead time, products.

Moreover resources that could be better used for forward logistics are diverted for customer returns.

Improving our stores:

Increased customer service – probably has the most impact from the customers' point of view, as the returns desk is the sole agency for contact for customers' returns. Thus the effectiveness of returns handling at the in-store returns desk forms a key perception of customer service. Moreover long waiting and complaint handling time increases customer frustration, thus queue busting (i.e. faster handling of customers), enhances this strategic objective.

Competency improvement of store team members – training and clarity of policy and processes, reflect on the efficiency of returns handling. The returns policy should be more explicit with examples, including role plays and reinforced with refresher training sessions. As the customer returns situations could be diverse.

Making it easier for stores to execute – is addressed by the extent of returns and is impacted upon by upstream actions by suppliers, buying team and supply chain processes.

5.3 Management Comments and options for further improvement

The findings of the research covered in this thesis was presented to TWL management and feedback sought. In particular comments from Tony Pendleton (the Supply Chain Development Manager, responsible for managing strategic projects at TWL) have been received. From this feedback the following conclusions and recommendations can be drawn:-

1. The report clearly details the description of the processes employed by TWL and these processes reflect operational procedures employed by TWL.

2. The environmentally friendly image and the triple bottom line reporting are important areas for TWL. Levels of returns have a direct impact on this area. By reducing the extent of returns TWL should be able to improve increased environmental sustainability (which in itself is an objective of TWL)
3. The reverse logistics distribution centres should mirror the supply chain in reverse, i.e conveyor to pallet to bottom rack, to top rack to the truck onwards to supplier, in a warehousing context. This would require a specialised WMS (warehouse management system) and identification and implementation of such a system at the reverse logistics DC is a potential work stream. Thus the process for reverse logistics at the DC requires refinement.
4. The research findings prompts a need to change the receipting options (i.e. the administrative process when customer returns product) based on product categories at Returns Desk, for capturing root cause of returns, this is a potential work stream. For example, apparel returns would have different return reasons as compared to toys, these differences need to be captured and used for further improvements as mentioned in the following comments.
5. There is also an identified need to enhance product quality by developing and communicating product specifications to suppliers (being currently done only for Apparel area). This is largely a gap in forward logistics, but could be a cause for high returns and needs to be addressed.
6. Quality control centres to check quality at source (overseas – especially China) should use the developed specifications and check products before despatch. This will reinforce the adherence to specification by suppliers.
7. The root causes identified at returns desk should be collated and fed into the quality control centres for enhanced checking and as appropriate could also

be used to modify product specifications. This is related to identifying and correcting the root causes attributable to supplier manufacturing processes or product specifications. In achieving this option a feedback loop for auditing incoming supplies will be instigated, this would be useful for identifying returns reasons.

8. The auctioning process at PRDC, with further visibility and controls has the potential to be a profit centre by limiting commercial loss to the business through better supplier credit management and auction revenues. Better negotiated terms with suppliers, towards acceptance / cost absorption of returns would limit the loss, on the other hand more of landfilled material through the auction process would improve, revenue generation.
9. There is also a possibility to outsource the entire customer returns supply chain, though this needs to be considered from a long term option, eg. Customers could be requested to return products regionally at separate centres managed by outsourcing company. The implications of this initiative are that the existing facility will have to be redeployed or sold, the process for outsourcing could be, expression of interest, RFQs (the request for quote activity), Bid / capability analysis, negotiations and finalisation of service provider with agreed service levels, aligned to costs, monitored frequently.
10. There is a need to initiate a more comprehensive plan – act – review cycle for the existing returns data, as appropriate. Possibilities include, targets by department over time, to be monitored by buyers and reported as a monthly pack. Actuals vs target, would yield variances, requiring suitable action eg product / supplier related. Reinforcement of the plan-act-review can be strengthened by adding returns metric in individual performance reviews and thus should be a part of the buyer performance metrics.

5.3 Future Research Opportunities

As highlighted in the above section, further research opportunities could focus on the root cause determination of returns at department / supplier level at TWL. There could also be research on reverse logistics impact on sustainability. A need exists to conduct research focussed to verify the similarities and differences in reverse logistics process at other retailers in New Zealand and internationally. Another important area for future research could involve mapping returns with respect to the timing of purchase.

Trends within grouped and individual categories can be further analysed through extensive data mining and analysis, for trends and peaks.

While a brief note has been included in this thesis on forward logistics at TWL, there is an opportunity to study from the value chain perspective (Walters D. 2006; Walters D., et al, 2002) TWL as a case study (or any other relevant alternative perspective). The following research questions could be addressed:

1. What are the customer value drivers?
2. What is the customer value proposition?
3. What are the implications for TWL?

It is hoped that the above research areas will highlight existing practices at TWL and also help identify areas for improvement.

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Appendix A - Detailed Department Returns Data

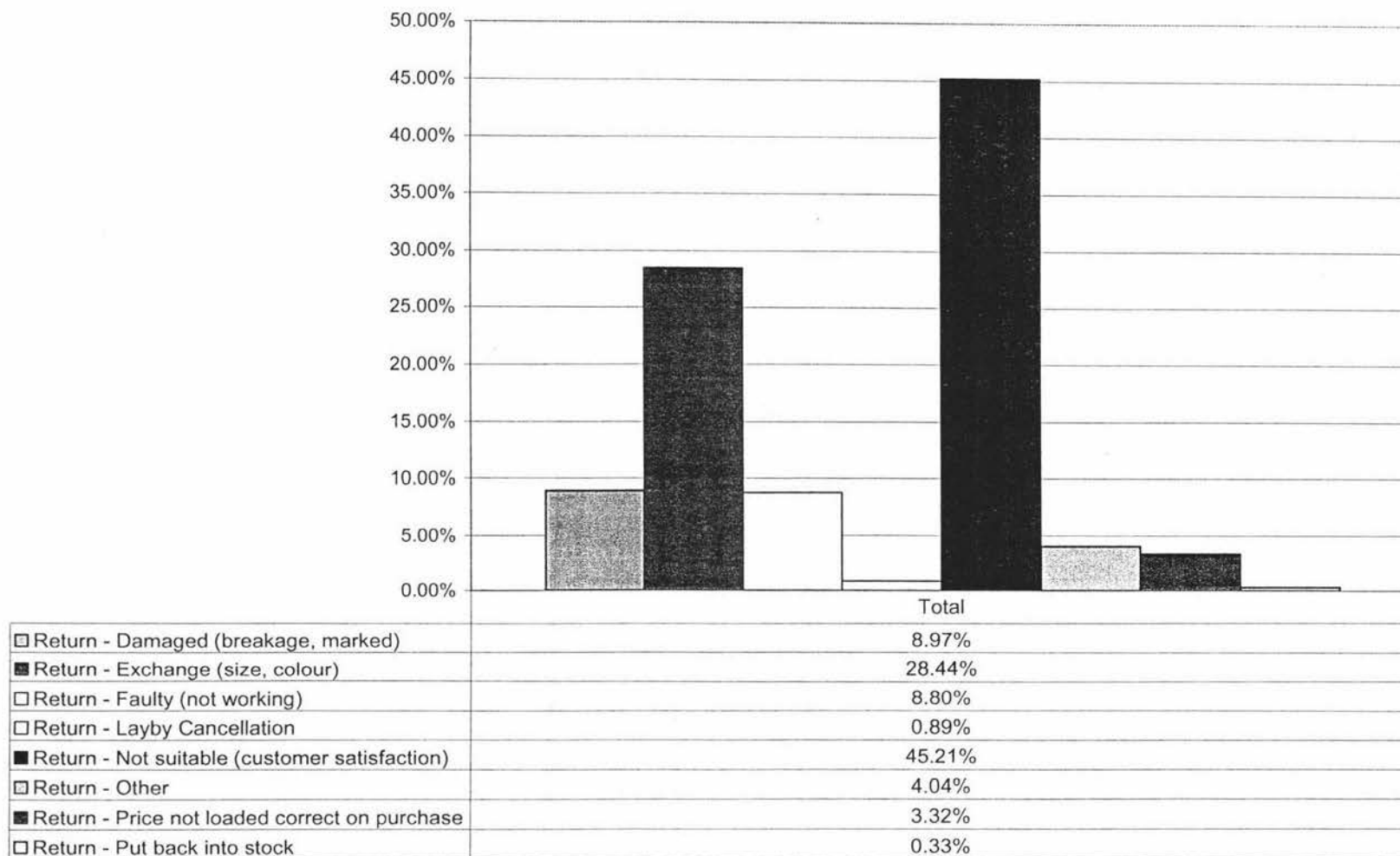


Figure 17 - Breakdown by Returns type – Adult Footwear

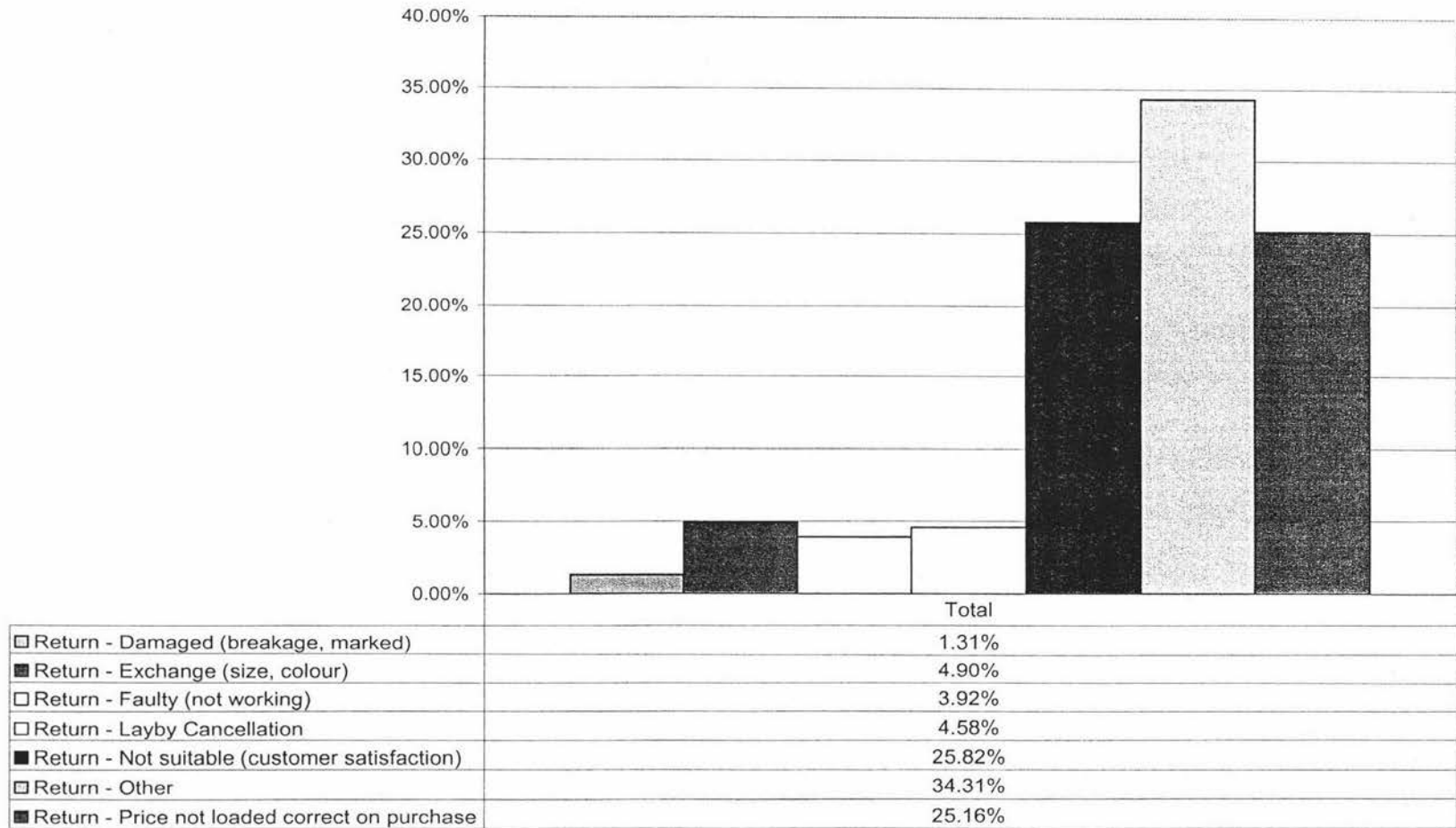


Figure 18 - Breakdown by Returns type – Ambient Grocery

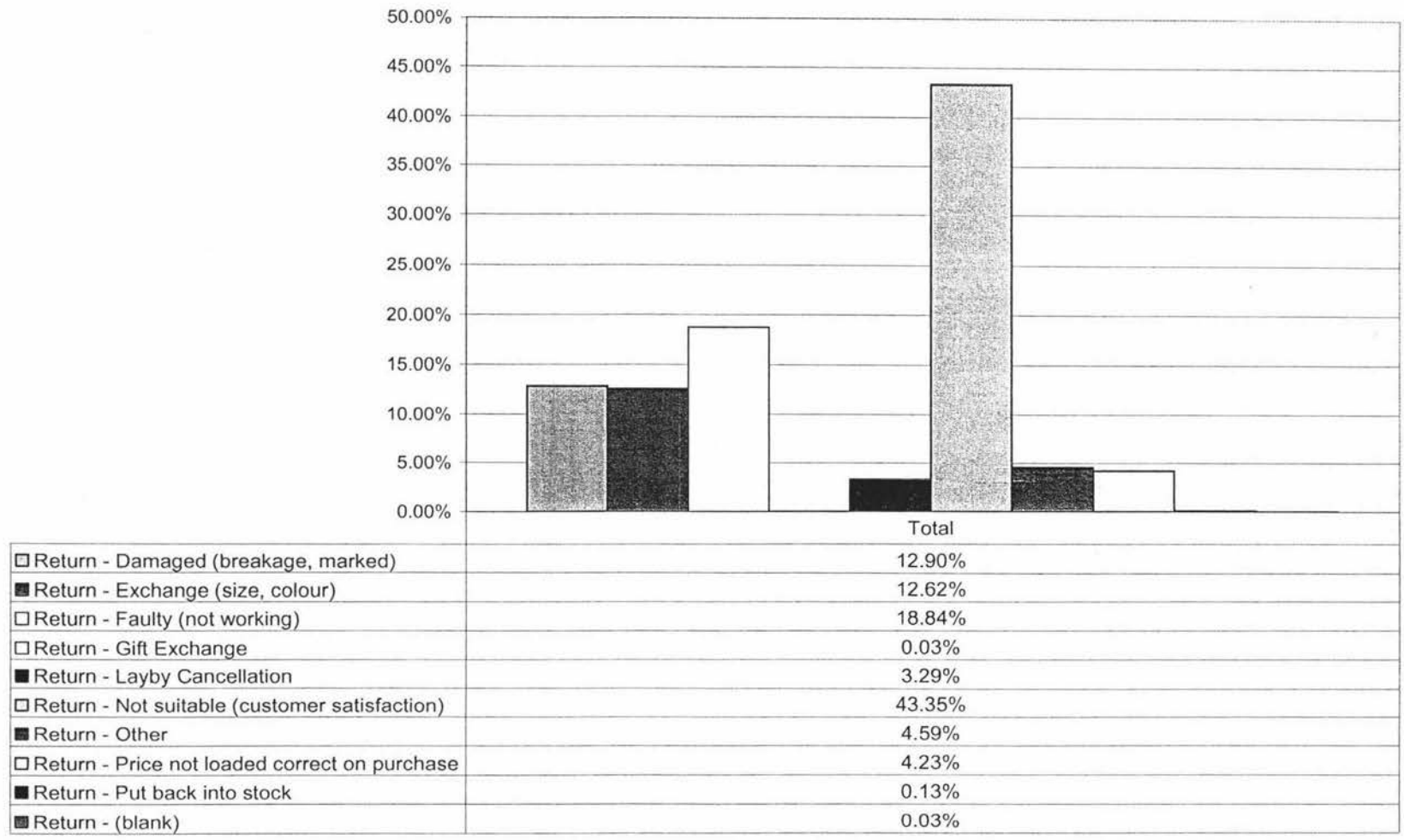


Figure 19 - Breakdown by Returns type – Apparel Accessories

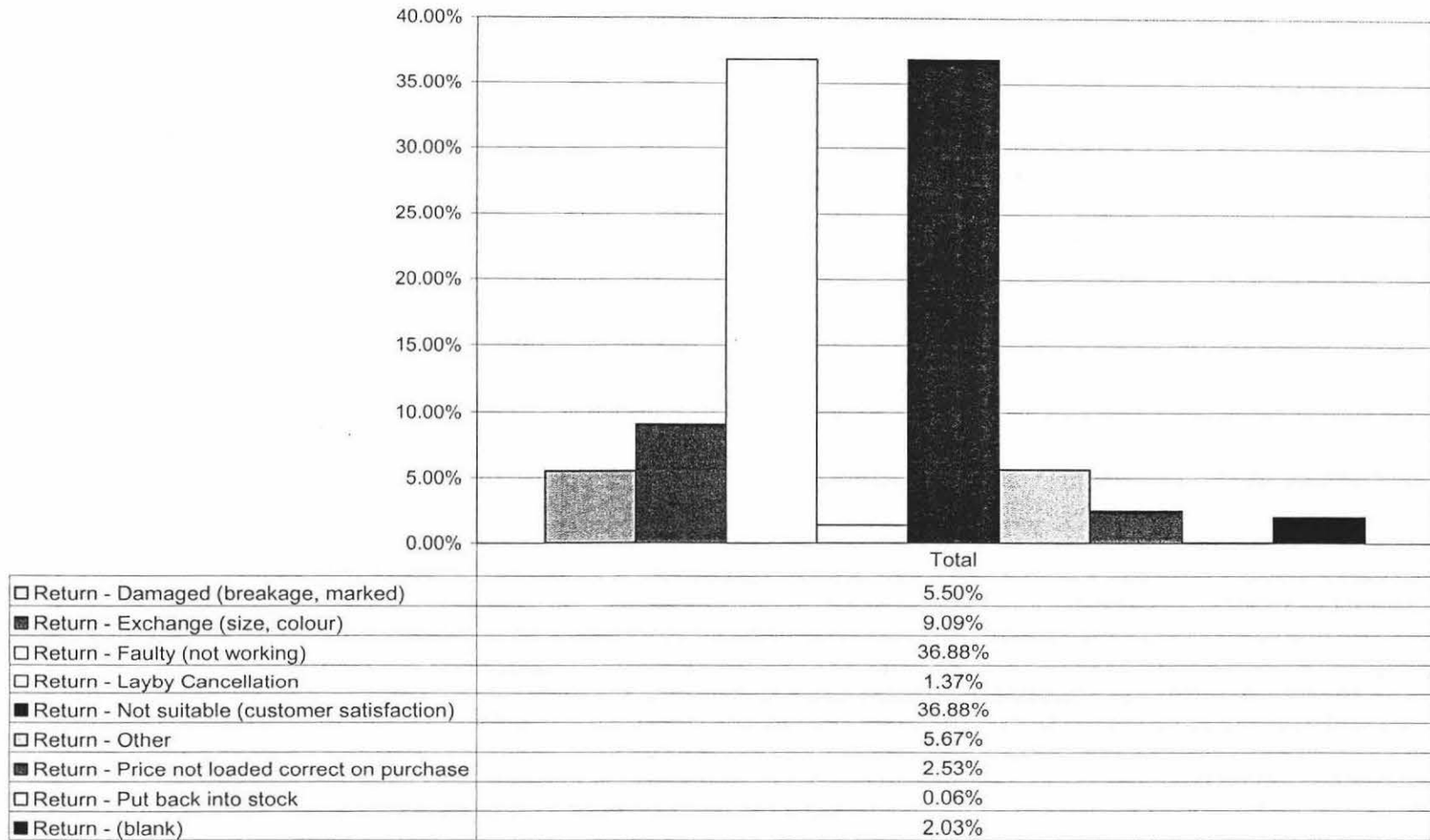


Figure 20 - Breakdown by Returns type – Appliances / Heating

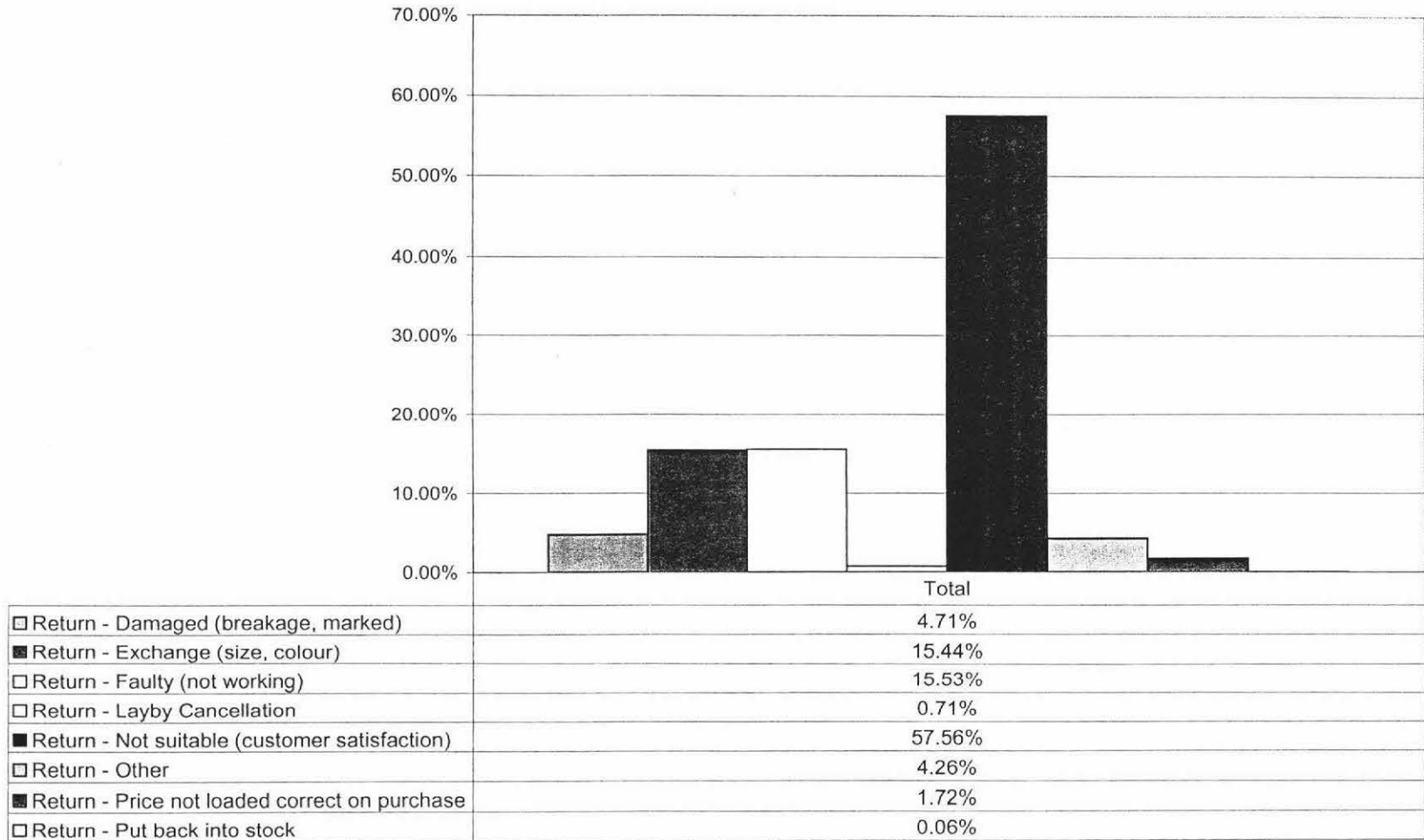


Figure 21 - Breakdown by Returns type – Automotive

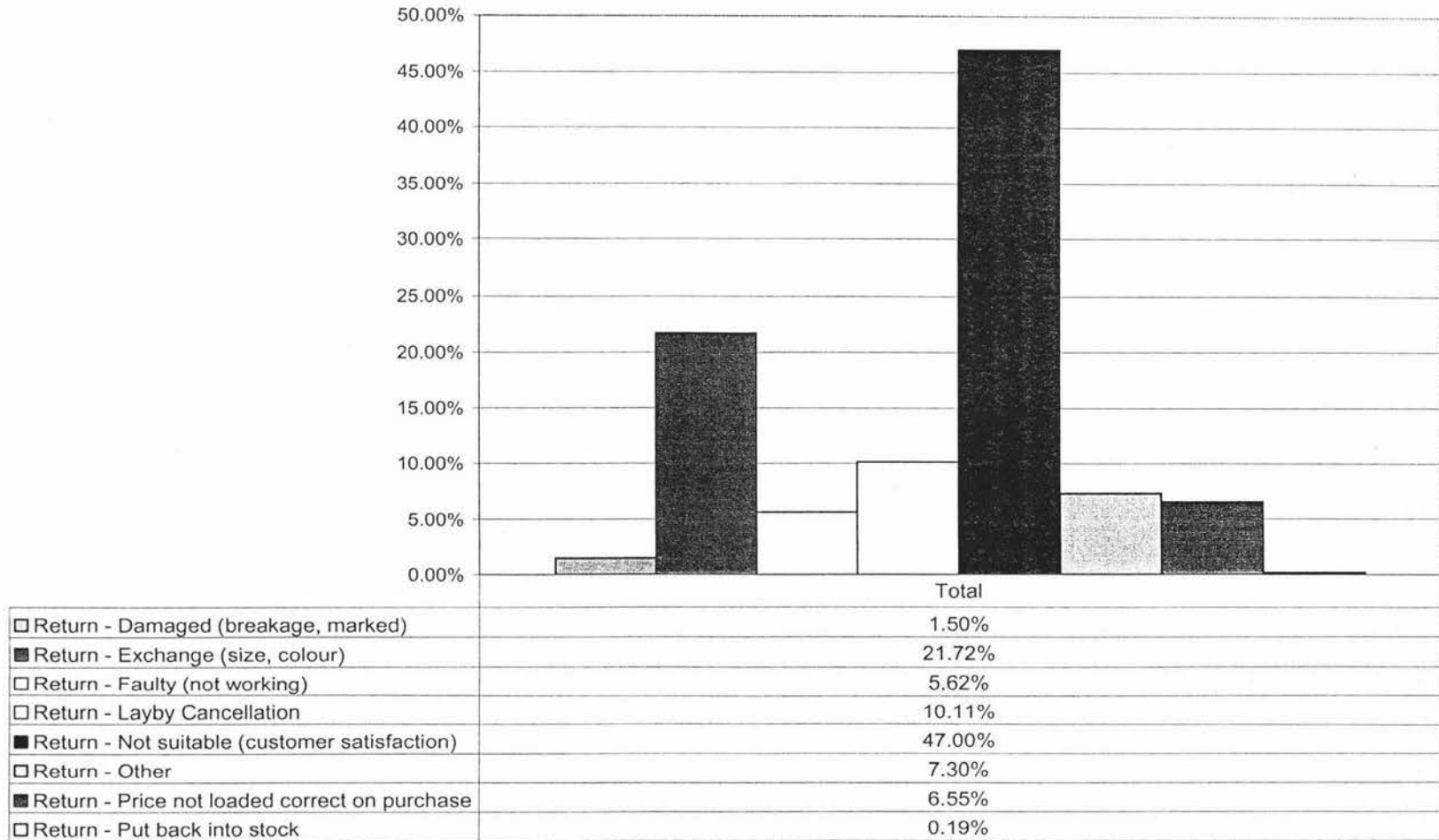


Figure 22 - Breakdown by Returns type – Babycare

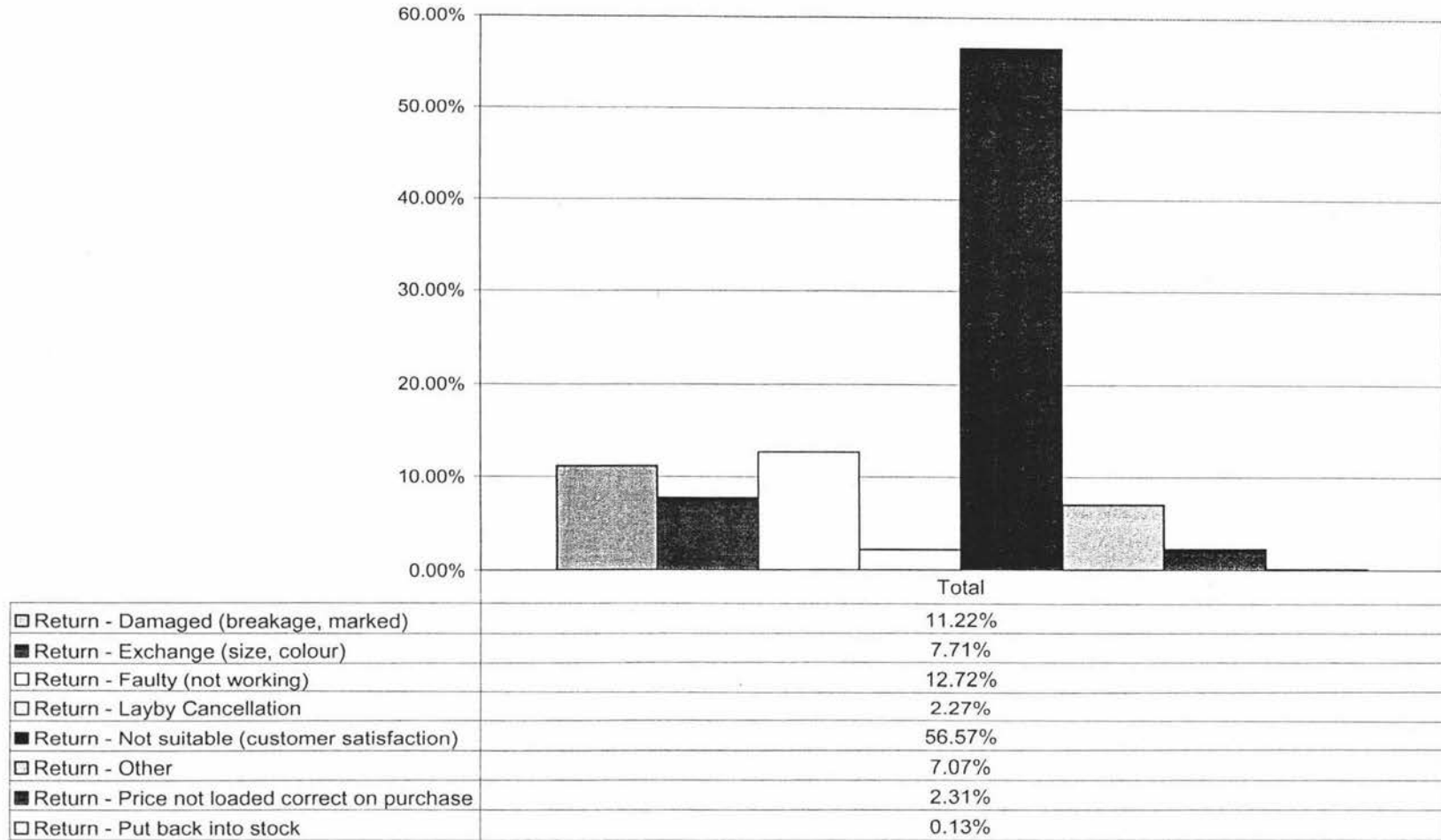


Figure 23 - Breakdown by Returns type – Bathroom/Laundry

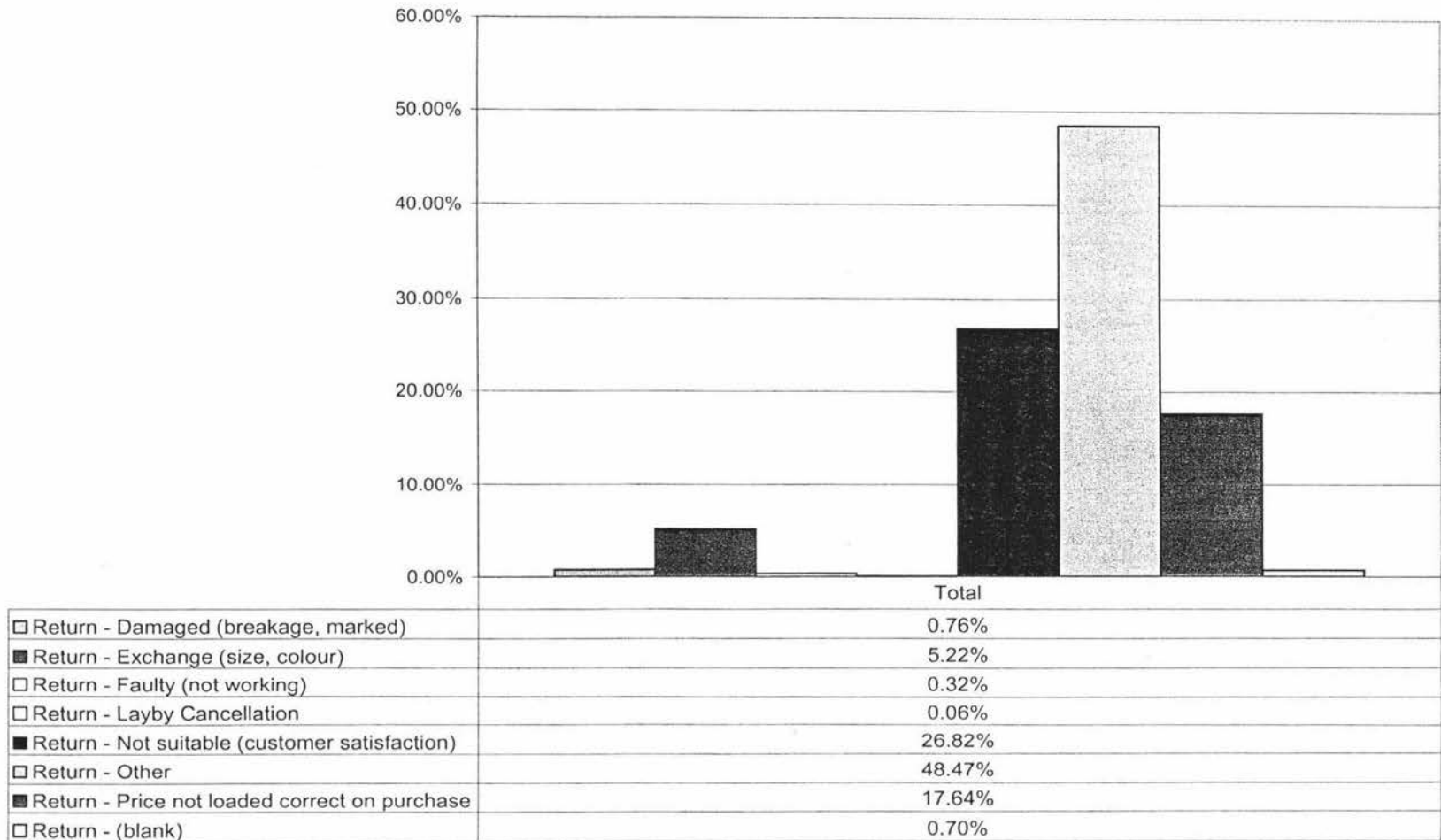


Figure 24 - Breakdown by Returns type – Beverages

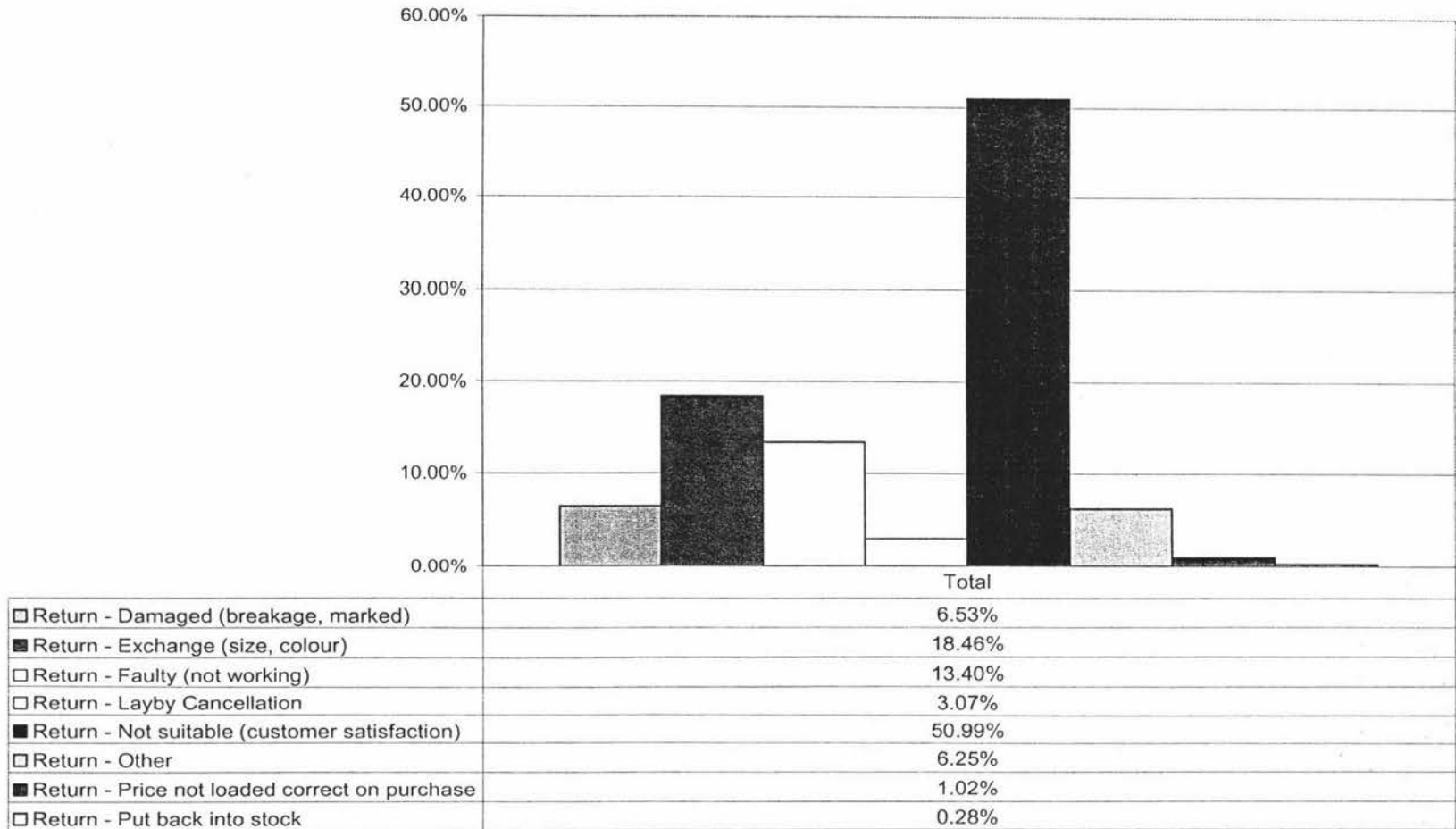


Figure 25 - Breakdown by Returns type – Bicycles

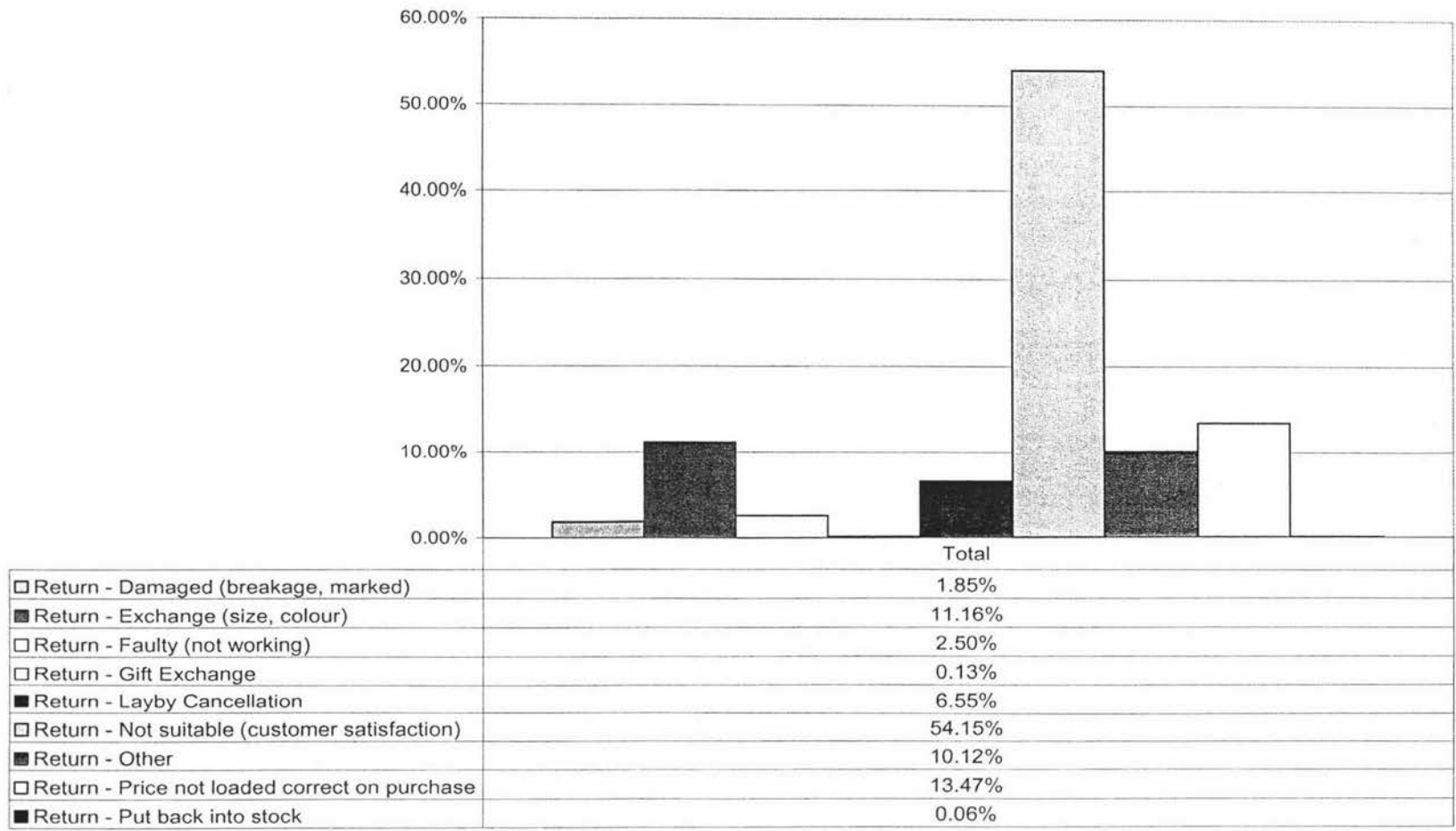


Figure 26 - Breakdown by Returns type – Books

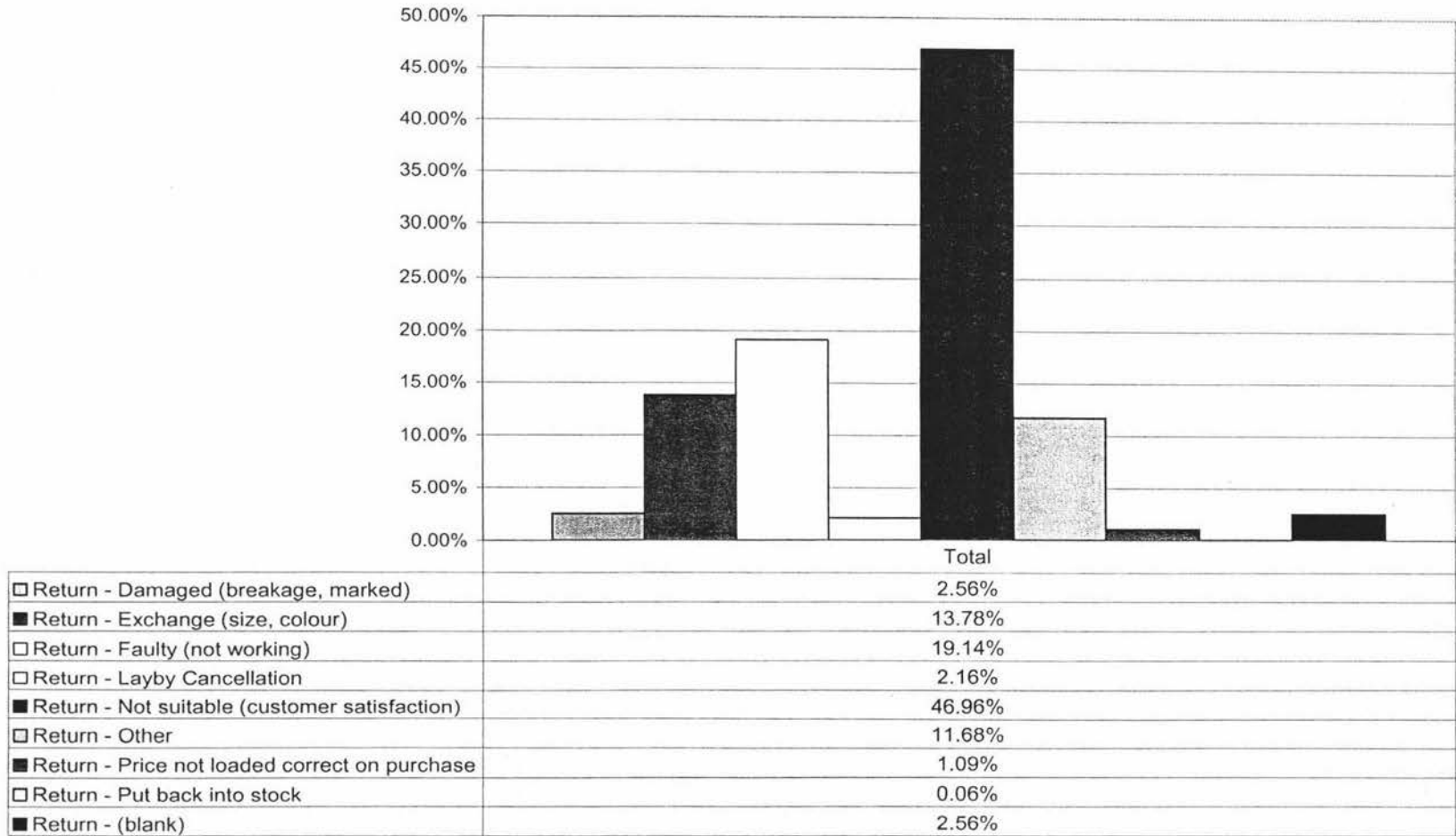


Figure 27 - Breakdown by Returns type – Business Machines

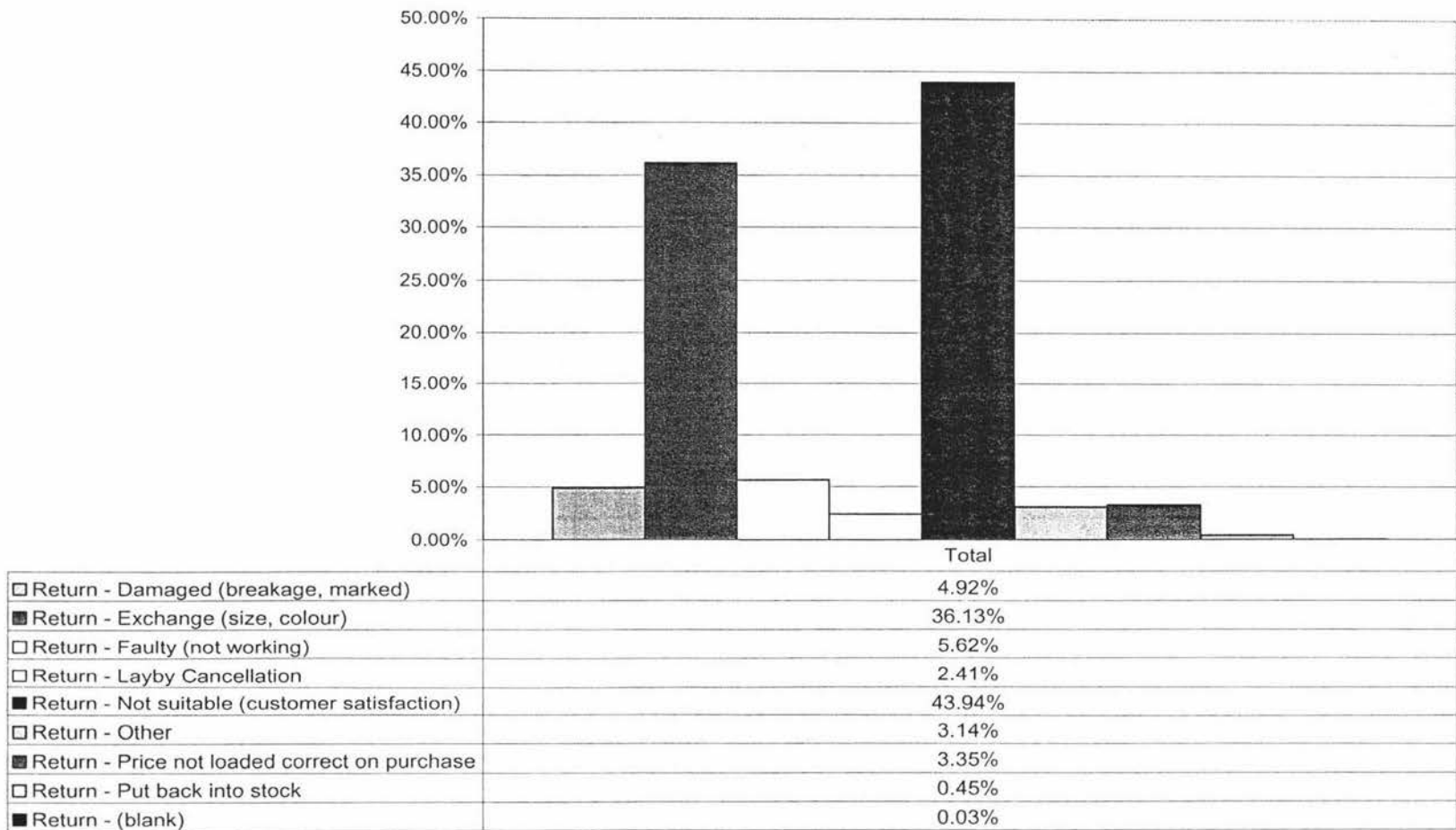


Figure 28 - Breakdown by Returns type – Childrens Footwear

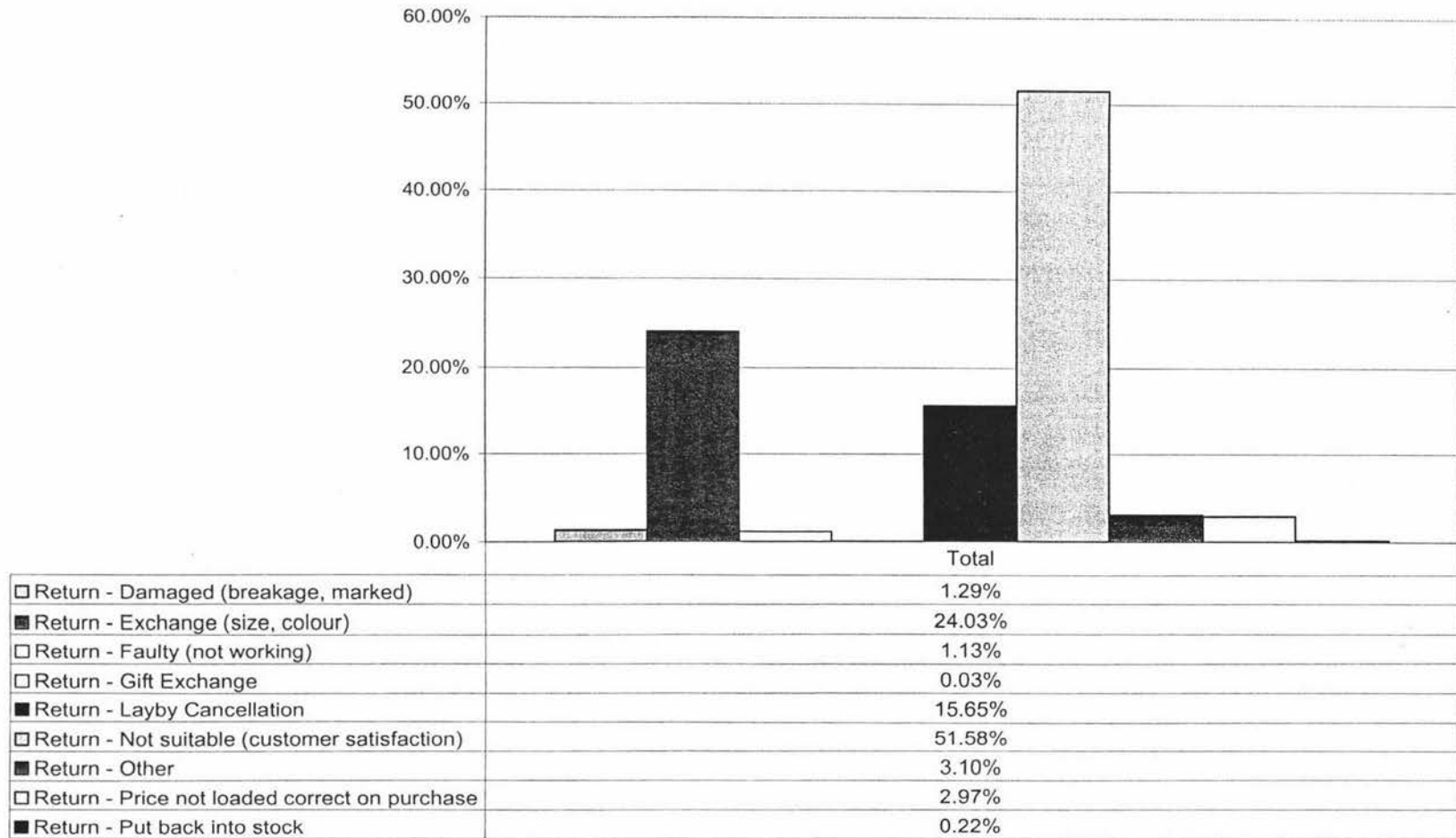


Figure 29 - Breakdown by Returns type – Childrens Outerwear

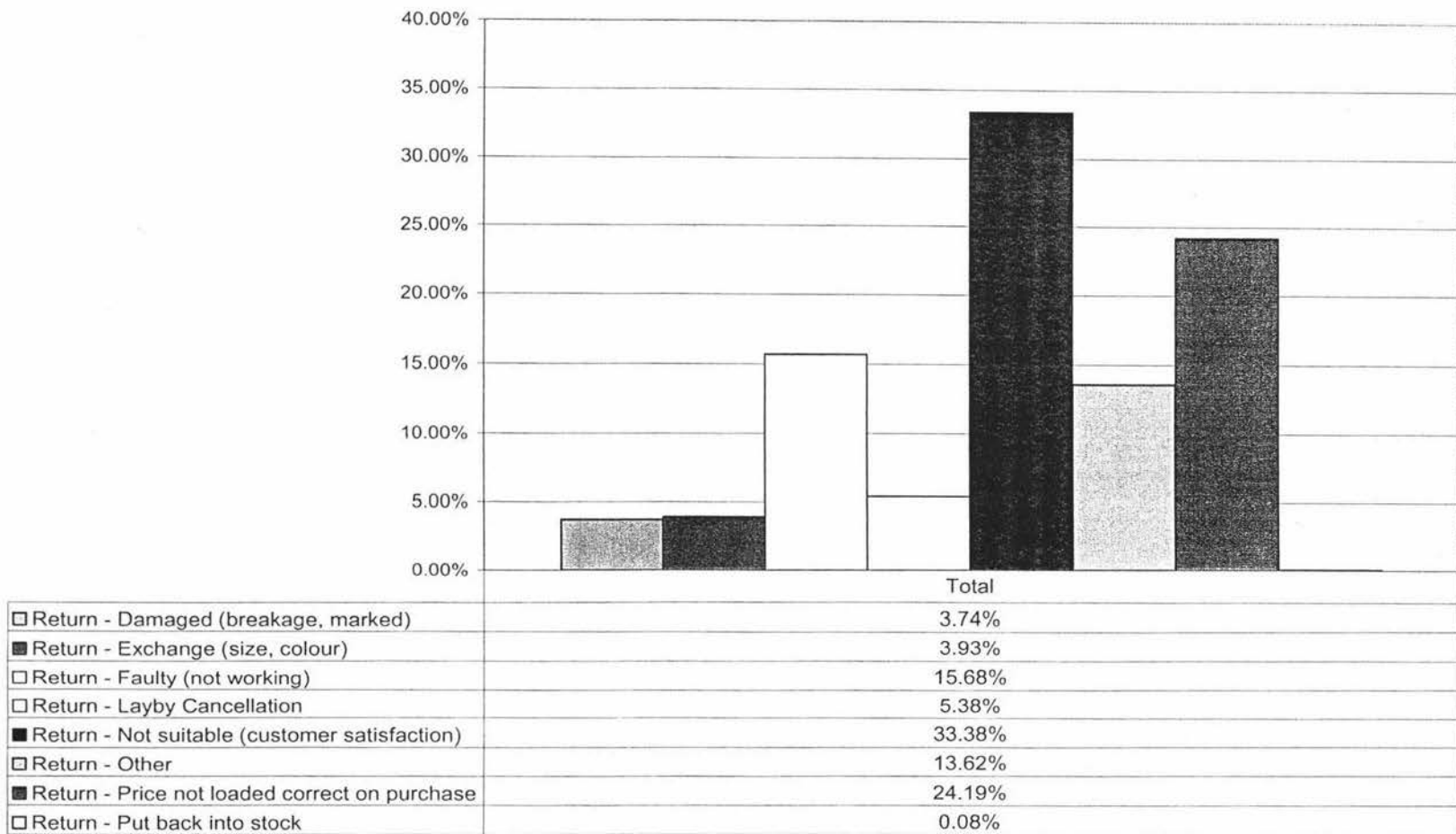


Figure 30 - Breakdown by Returns type – Christmas

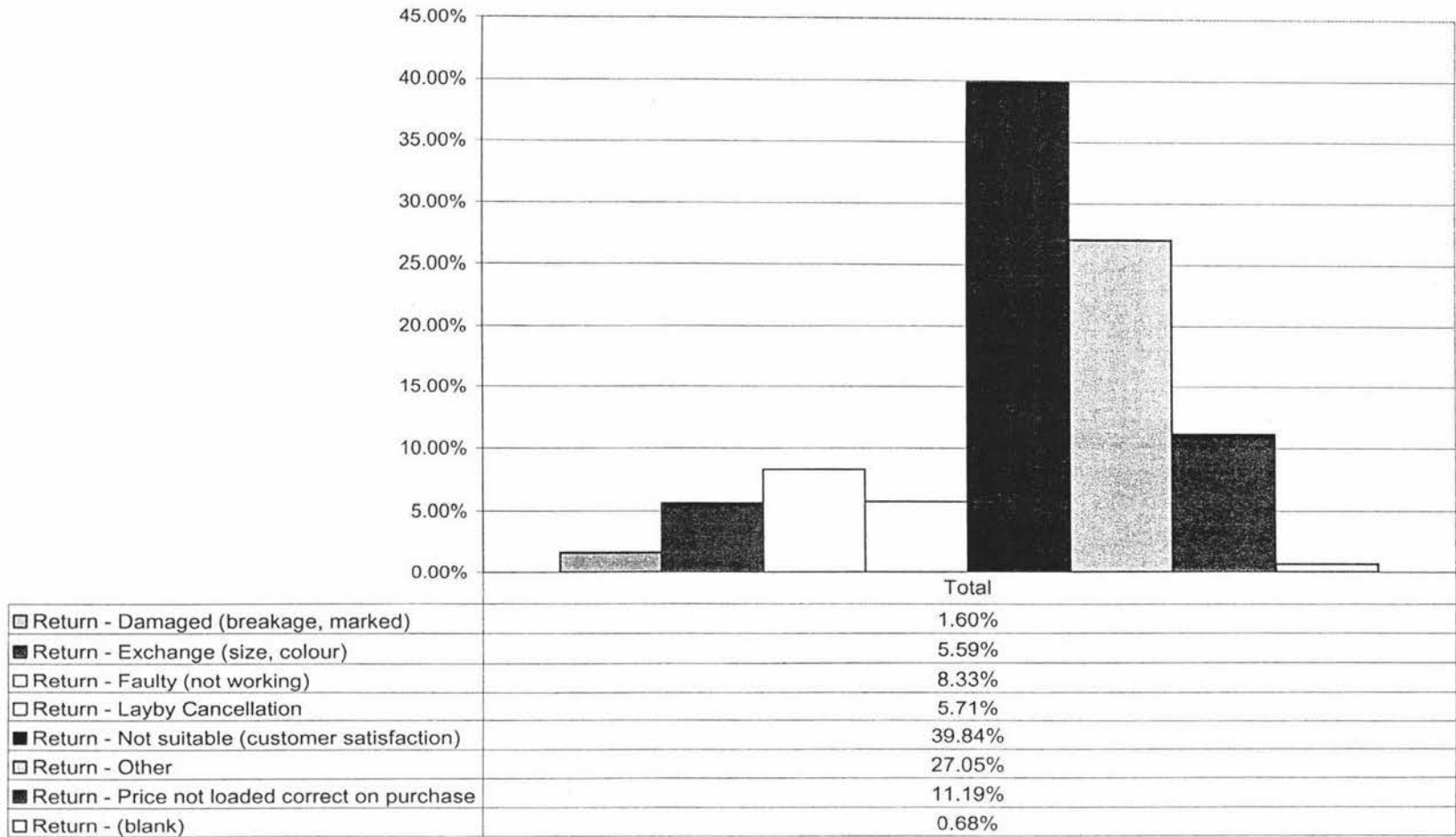


Figure 31 - Breakdown by Returns type – Consumables

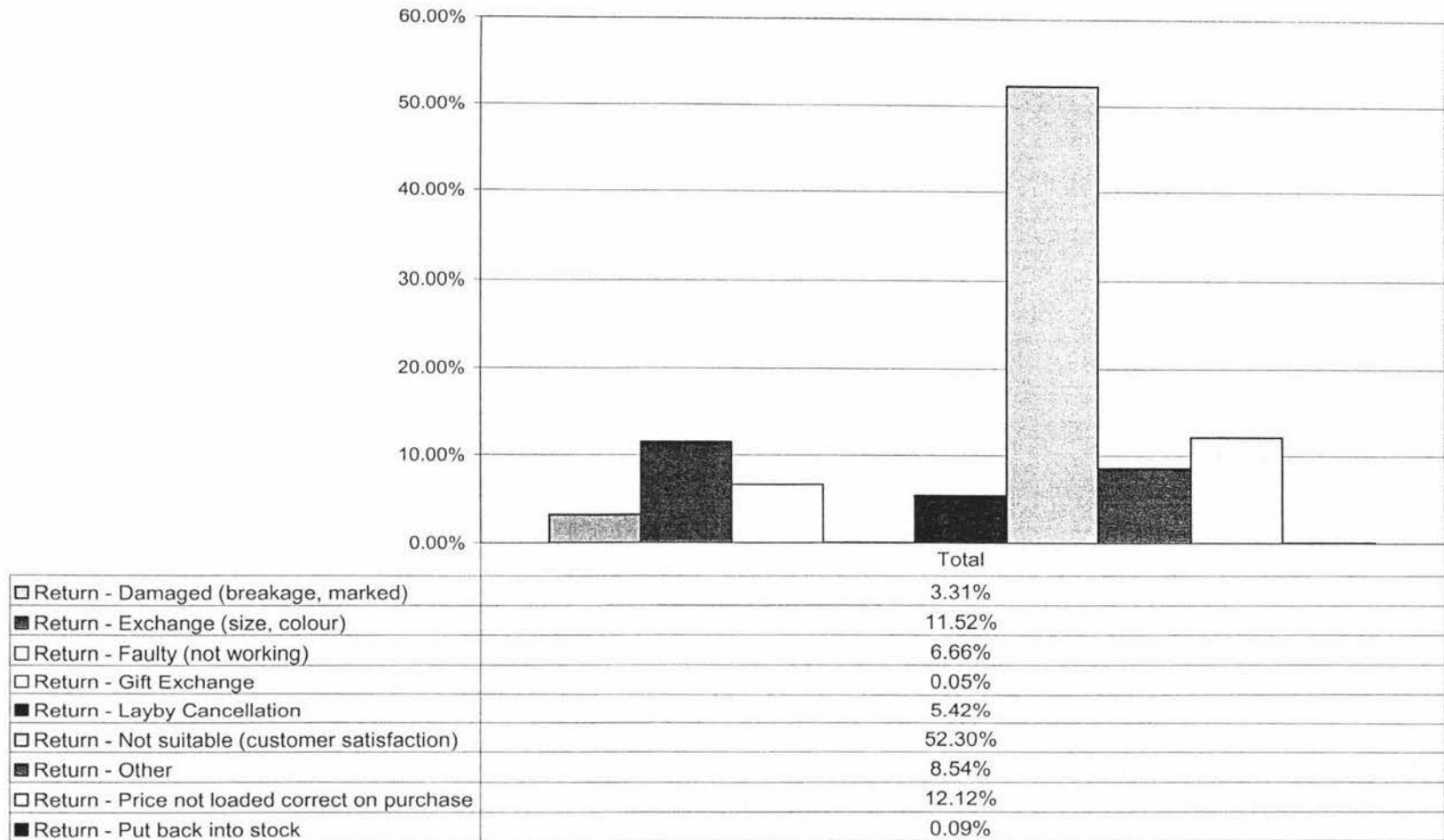


Figure 32 - Breakdown by Returns type – Craft

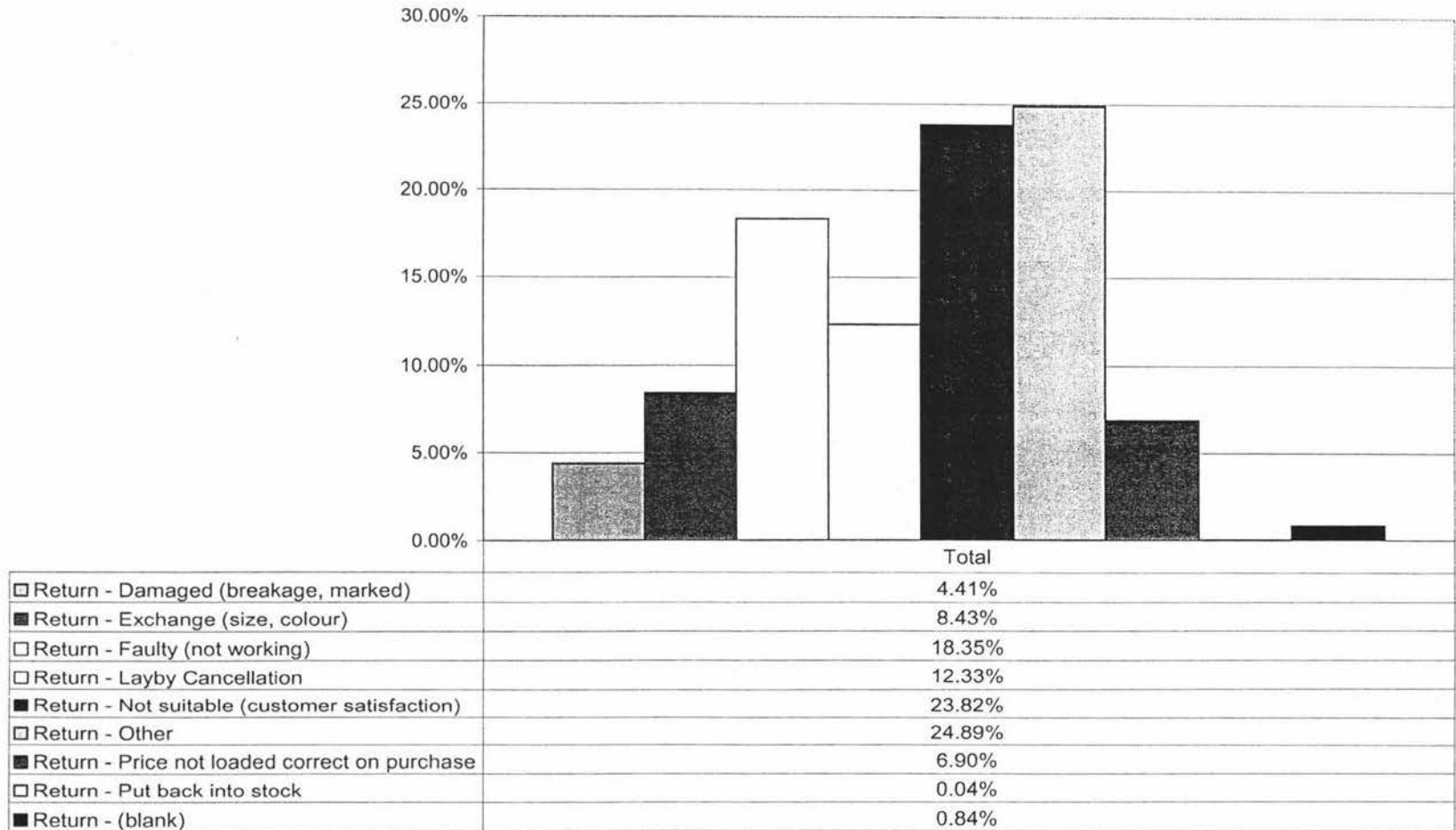


Figure 33 - Breakdown by Returns type – Entertainment

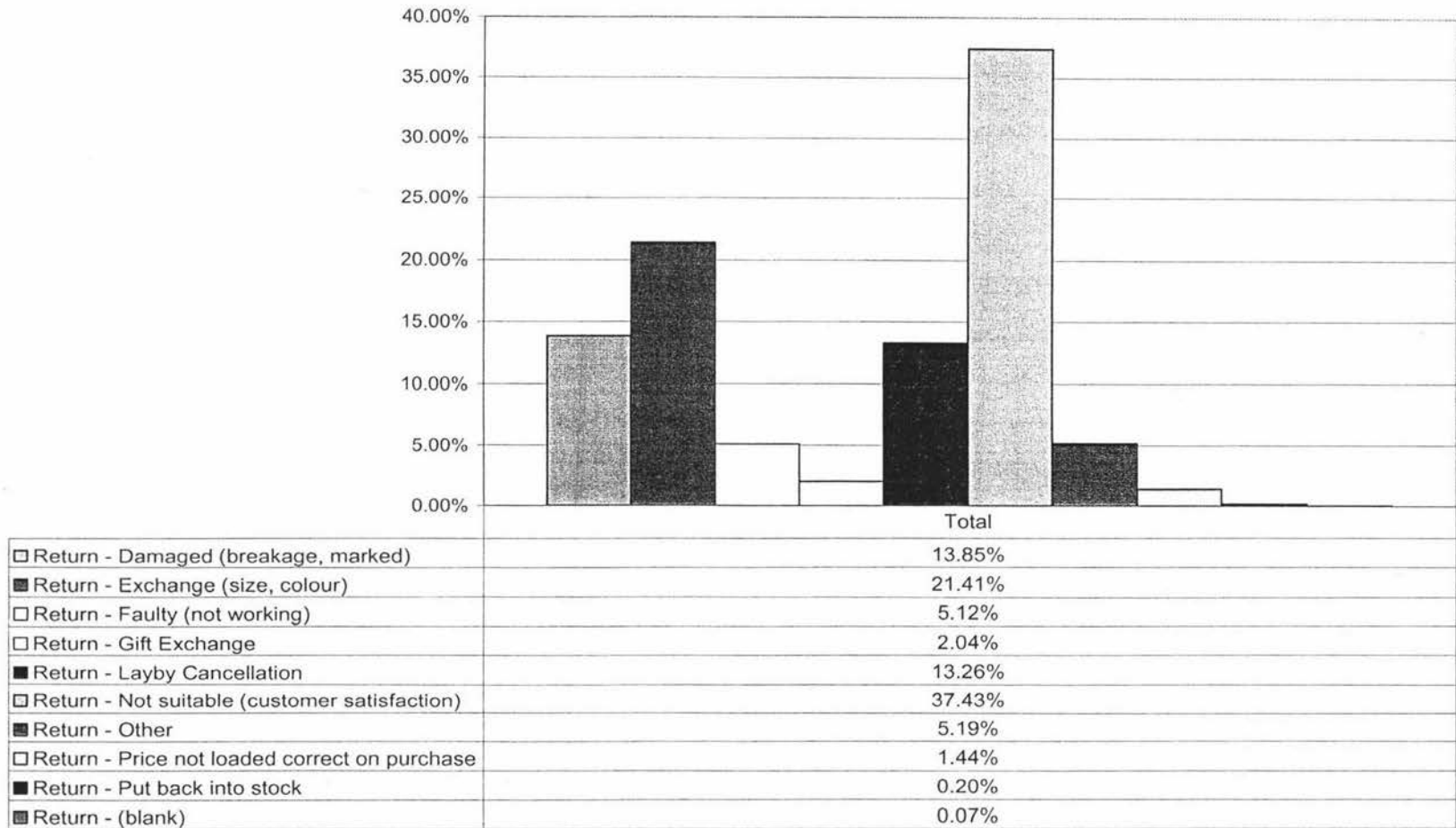


Figure 34 - Breakdown by Returns type – Fine Jewellery

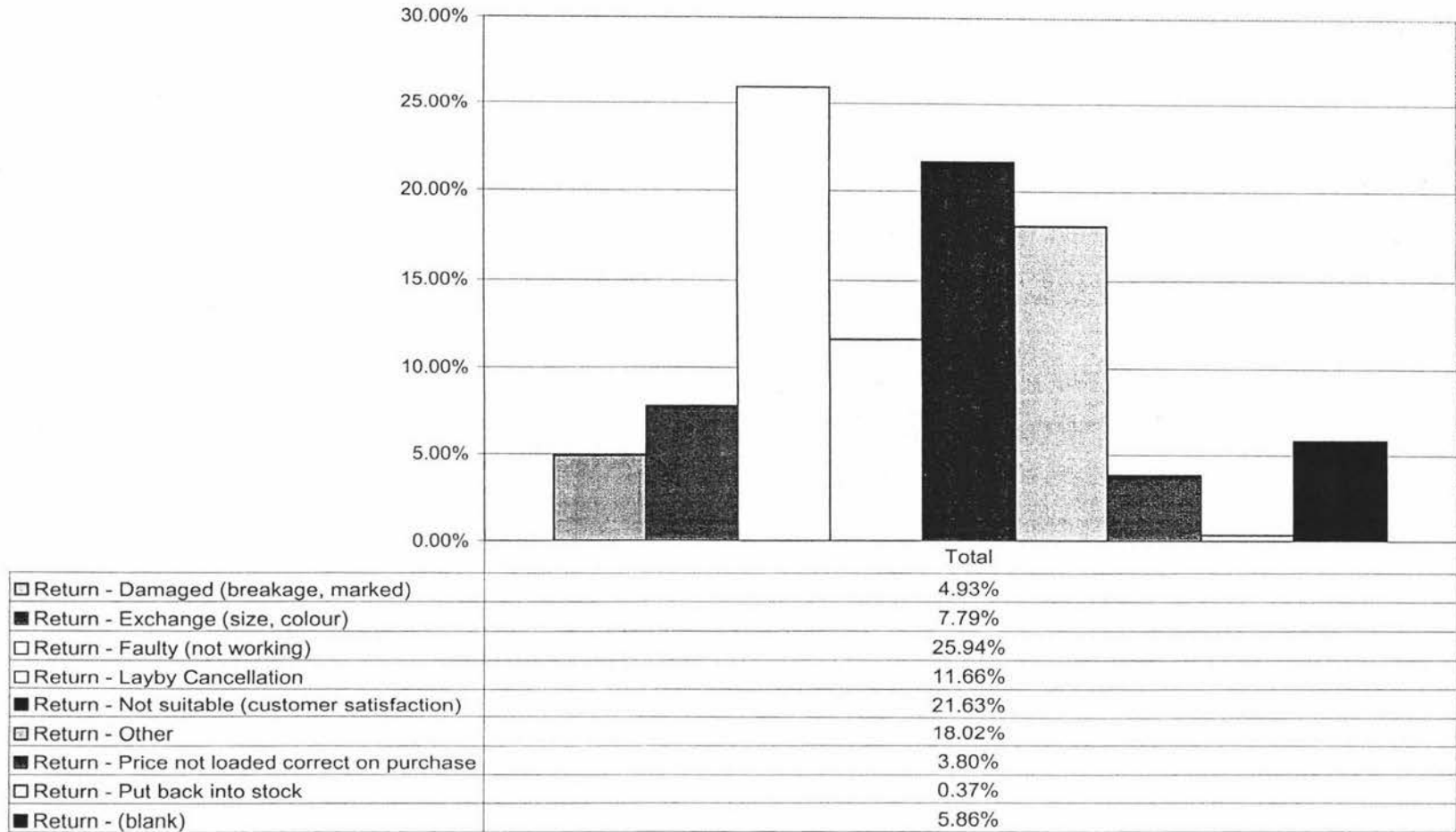


Figure 35 - Breakdown by Returns type – Gaming

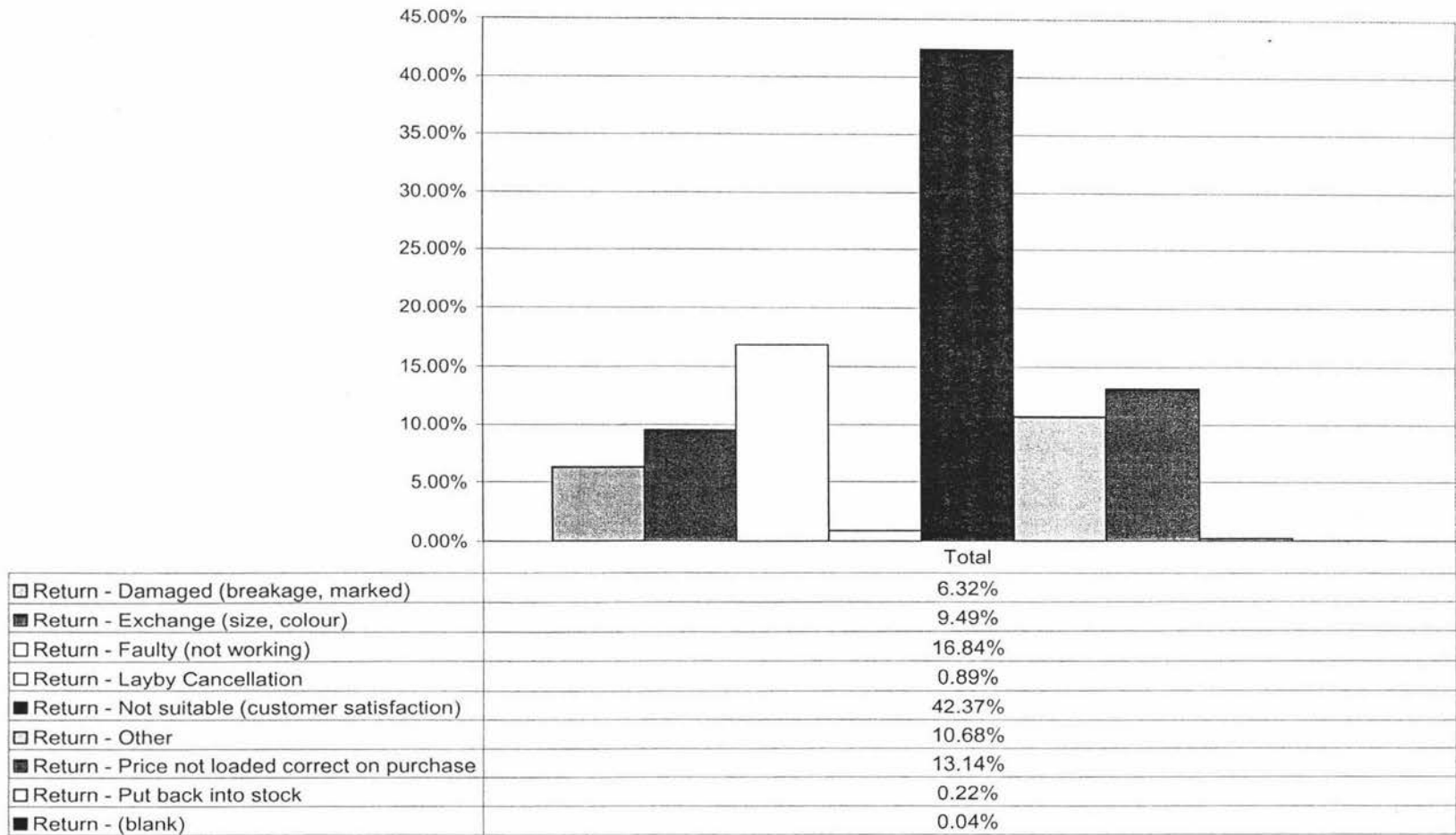


Figure 36 - Breakdown by Returns type – Gardening

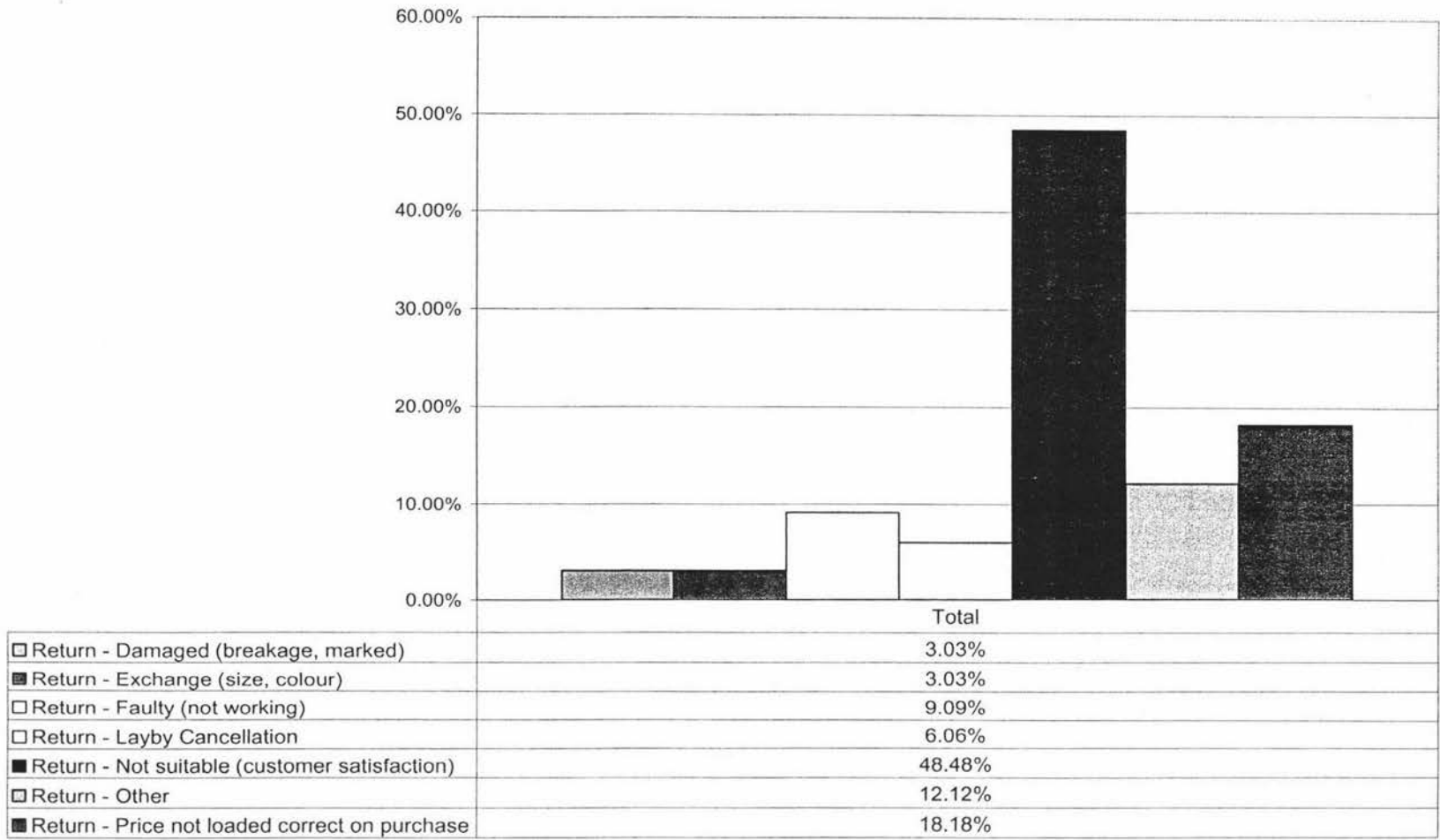


Figure 37 - Breakdown by Returns type – Halloween

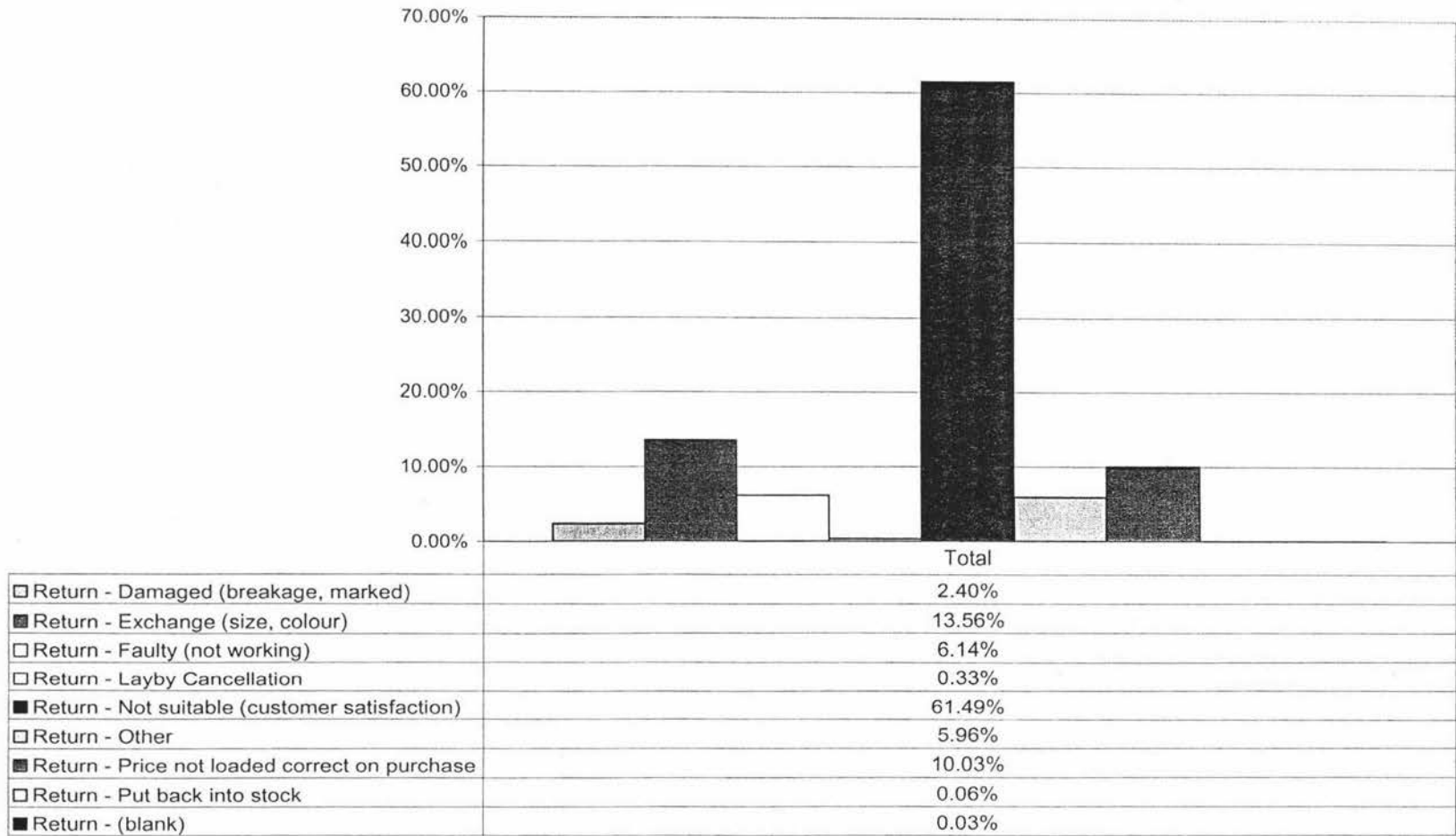


Figure 38 - Breakdown by Returns type – Hardware

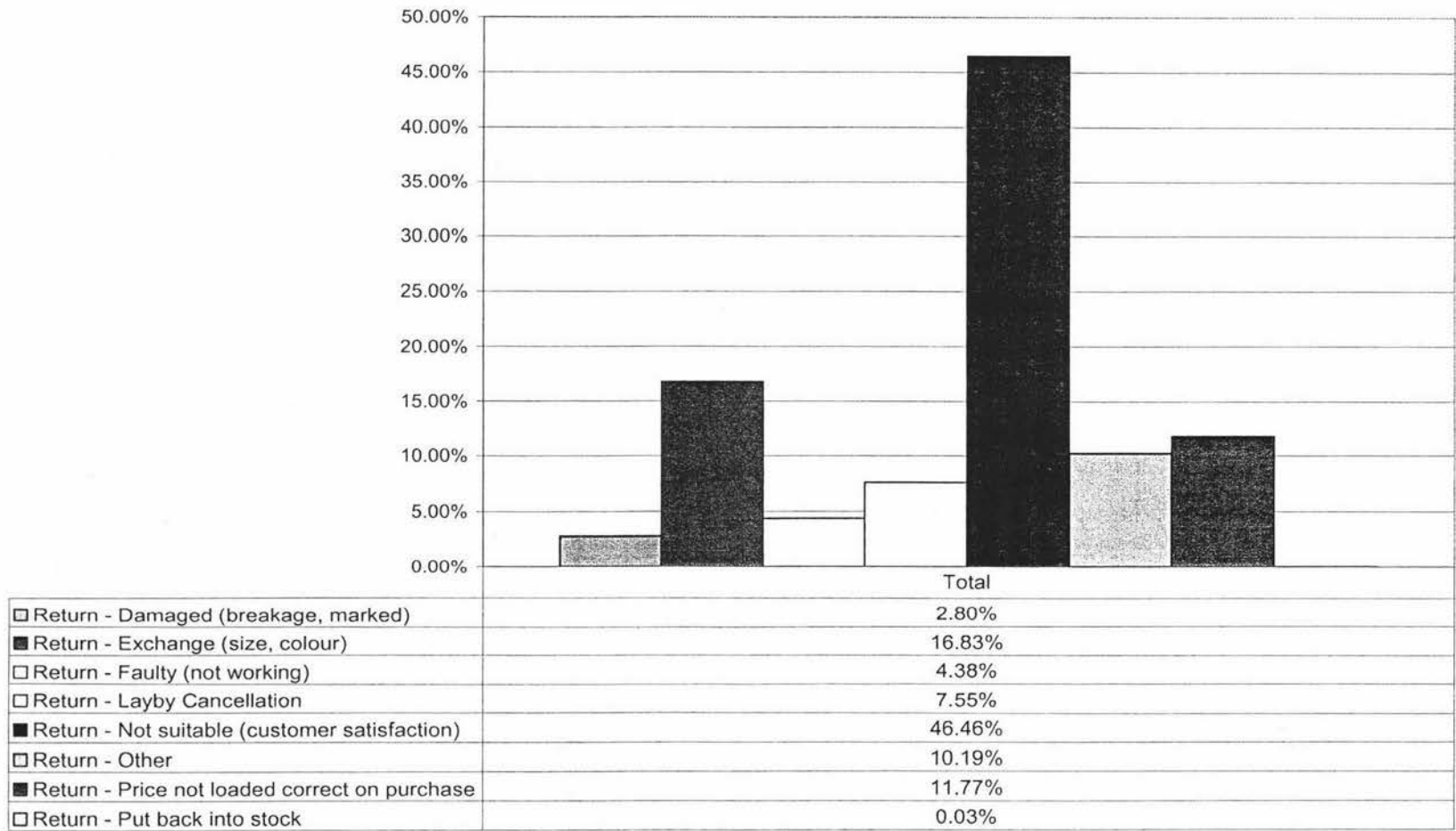


Figure 39 - Breakdown by Returns type – Health & Beauty

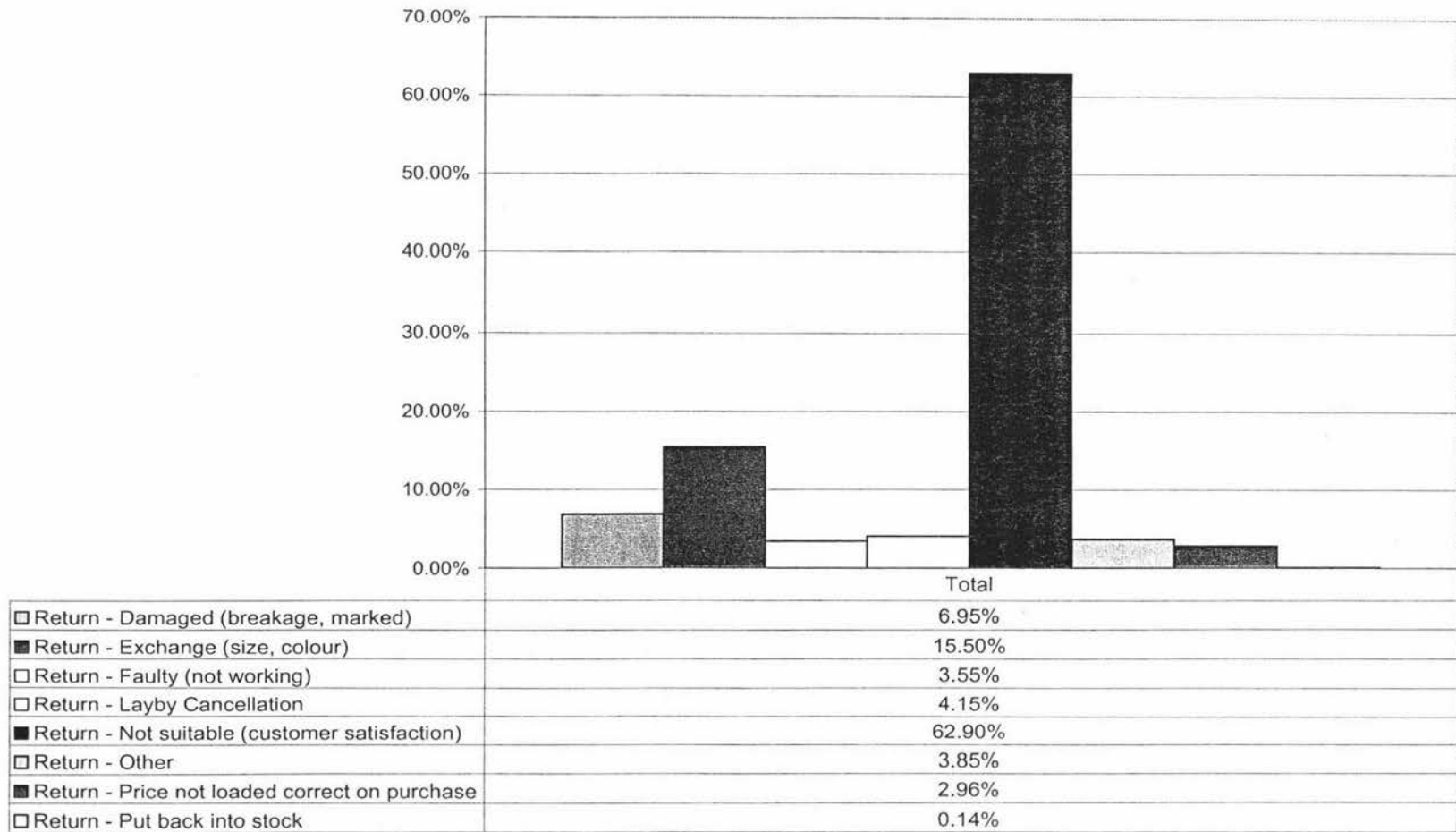


Figure 40 - Breakdown by Returns type – Home Decor

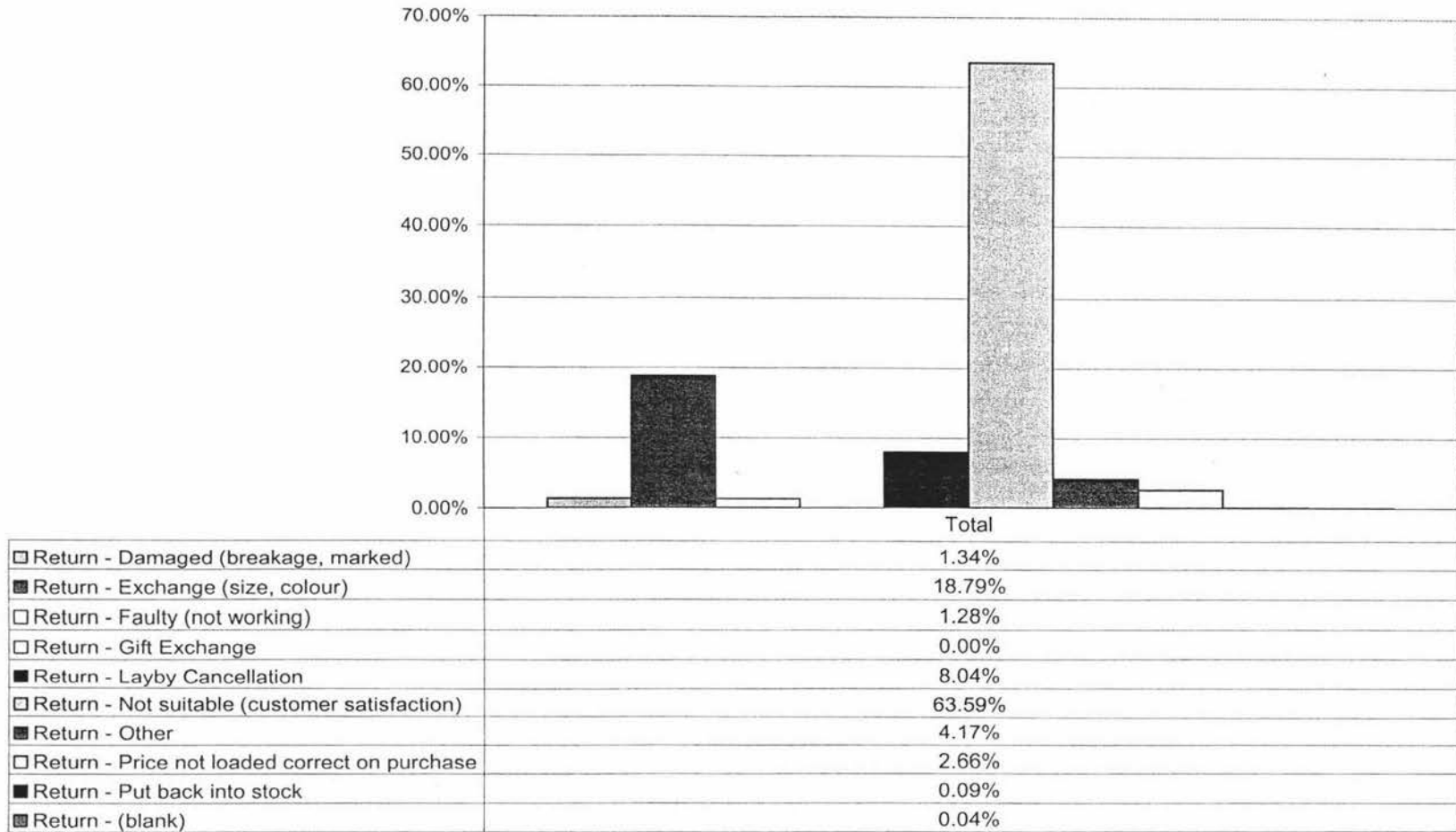


Figure 41 - Breakdown by Returns type – Home Textiles

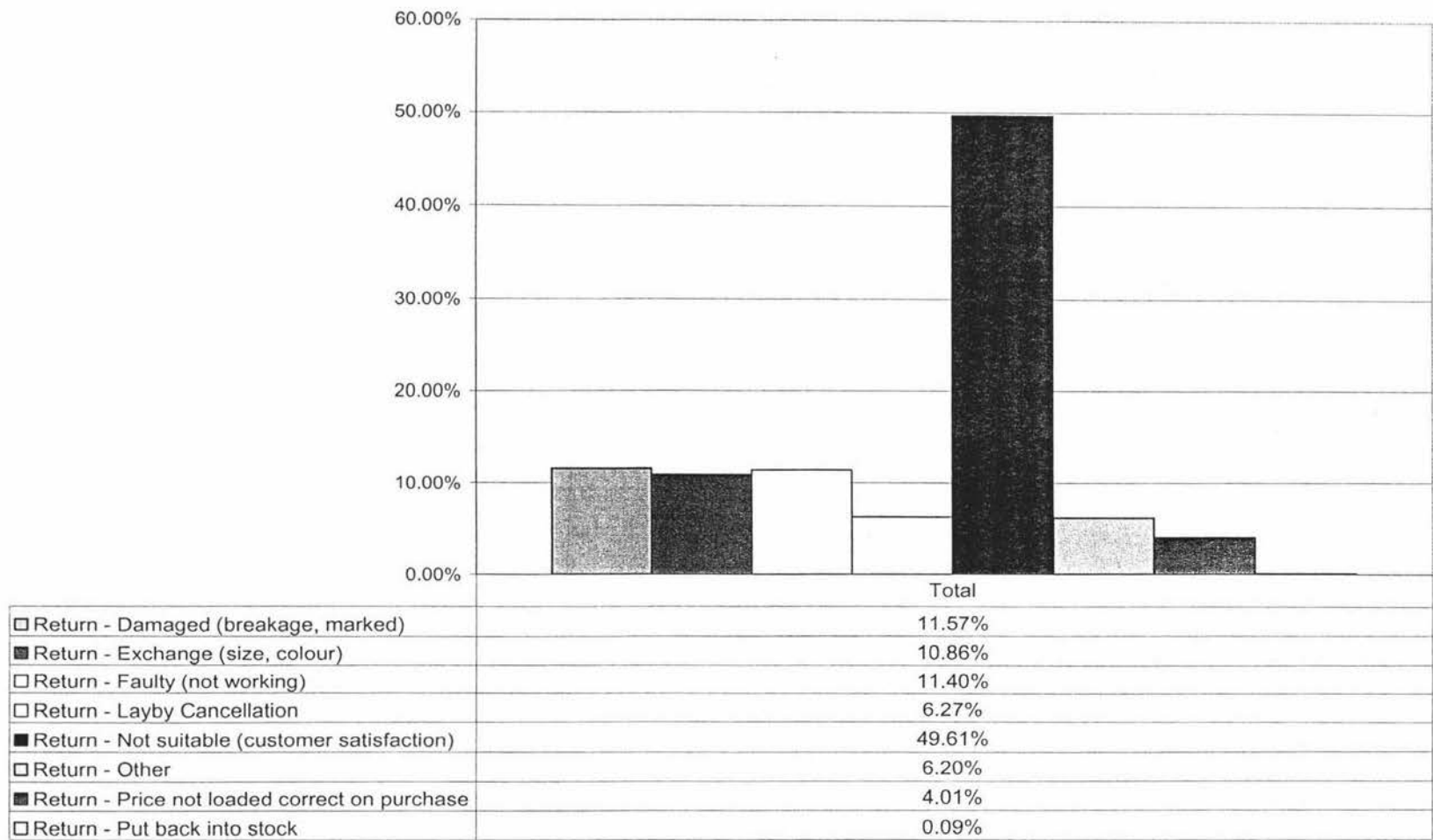


Figure 42 - Breakdown by Returns type – Homewares

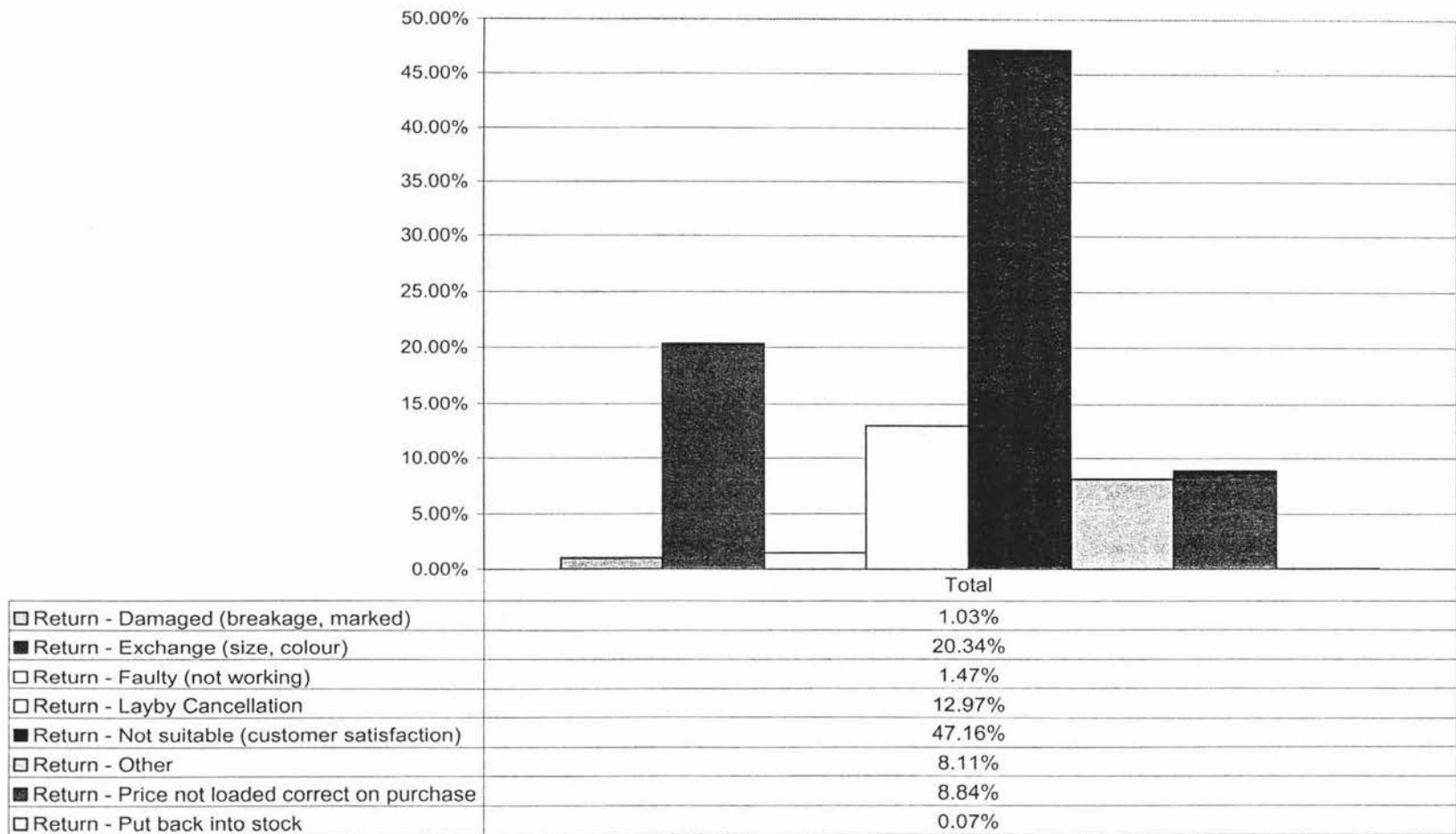


Figure 43 - Breakdown by Returns type – Hosiery

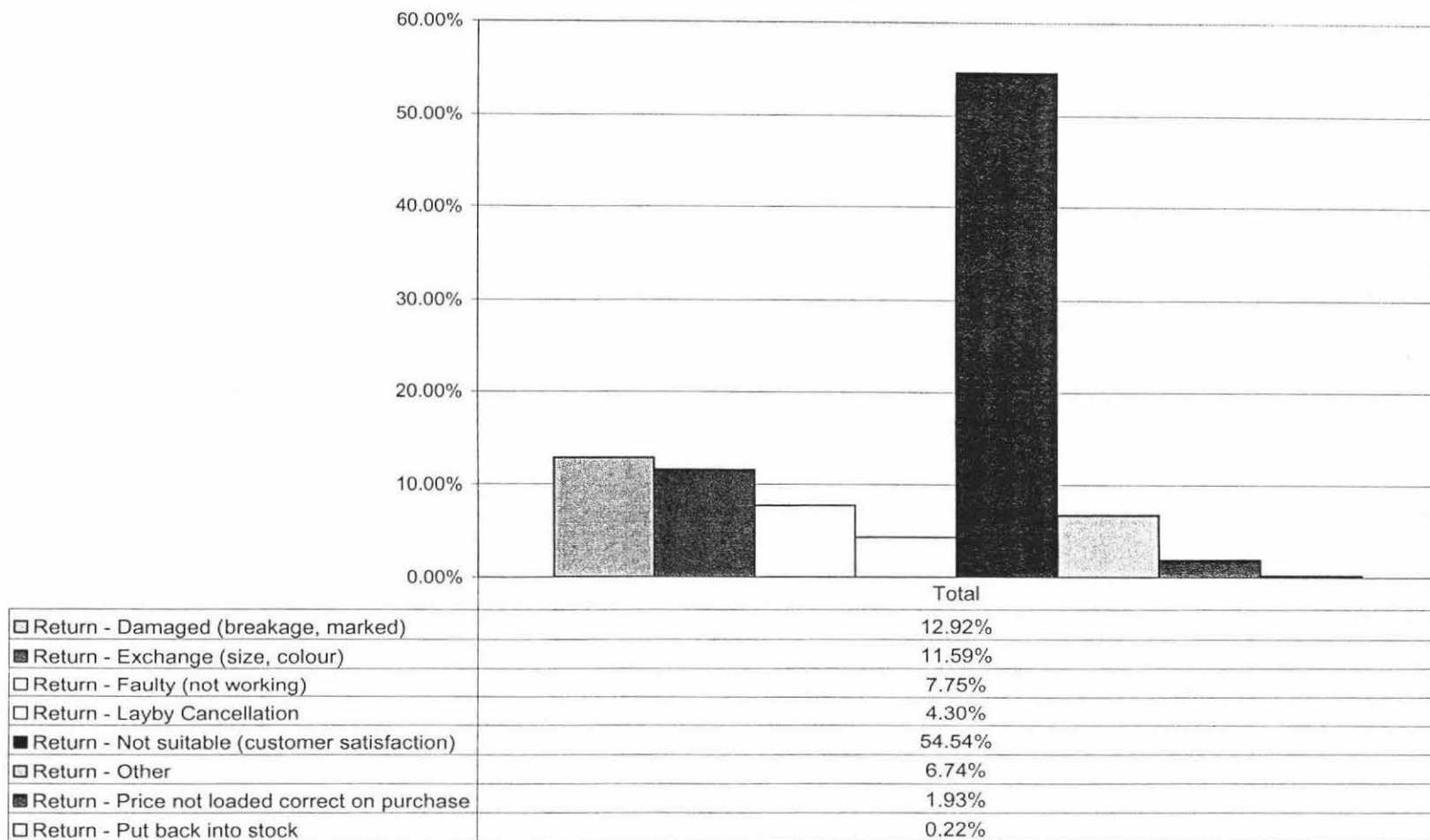


Figure 44 - Breakdown by Returns type – Indoor Living

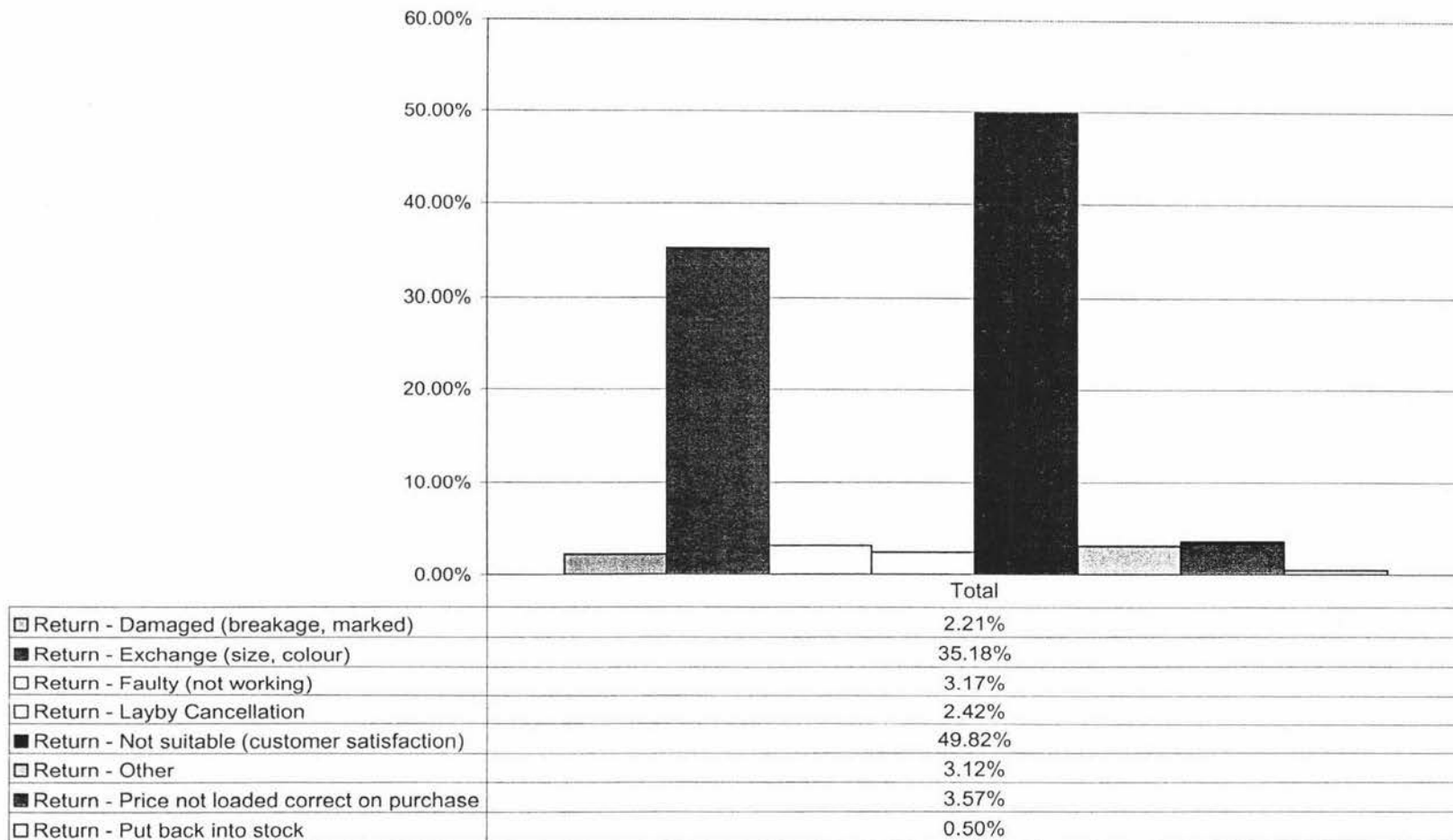


Figure 45 - Breakdown by Returns type – Infants Footwear

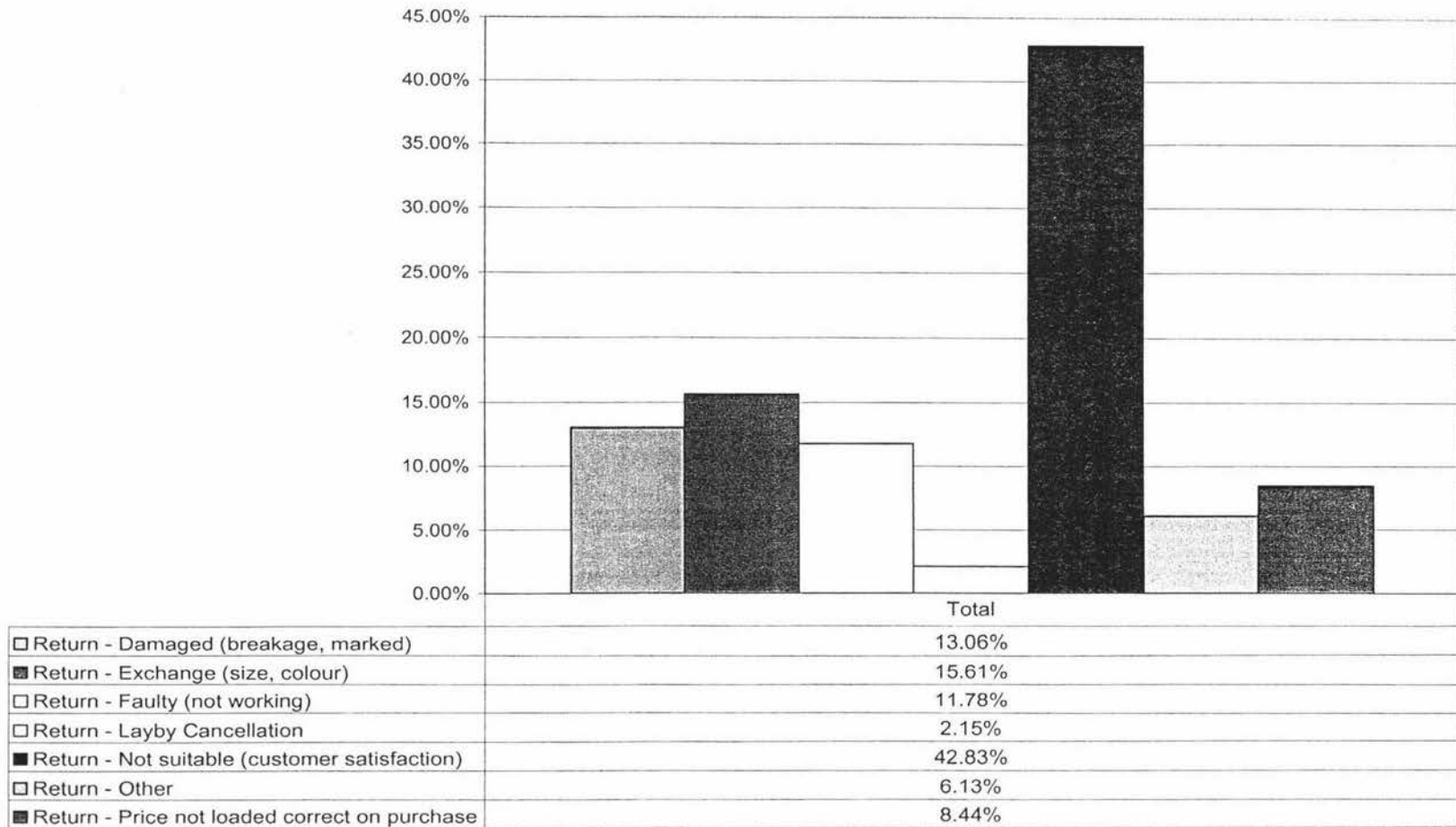
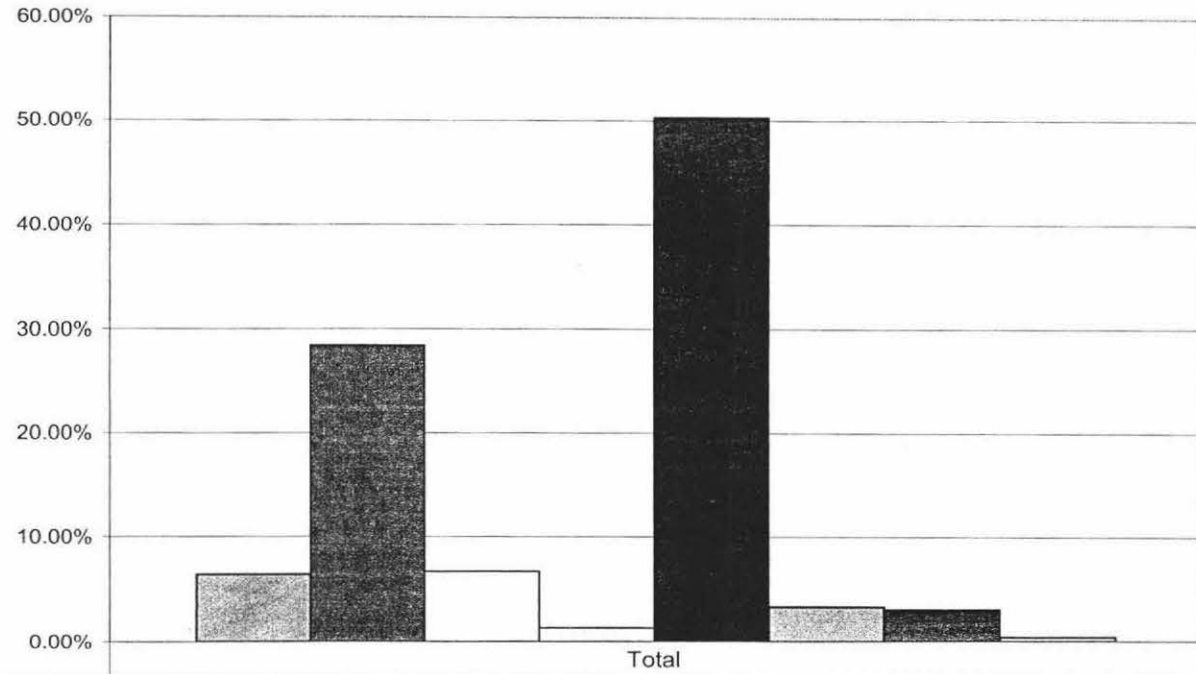


Figure 46 - Breakdown by Returns type – Luggage



Return - Damaged (breakage, marked)	6.43%
Return - Exchange (size, colour)	28.46%
Return - Faulty (not working)	6.69%
Return - Layby Cancellation	1.30%
Return - Not suitable (customer satisfaction)	50.29%
Return - Other	3.31%
Return - Price not loaded correct on purchase	3.05%
Return - Put back into stock	0.45%

Figure 47 - Breakdown by Returns type – Mens Footwear

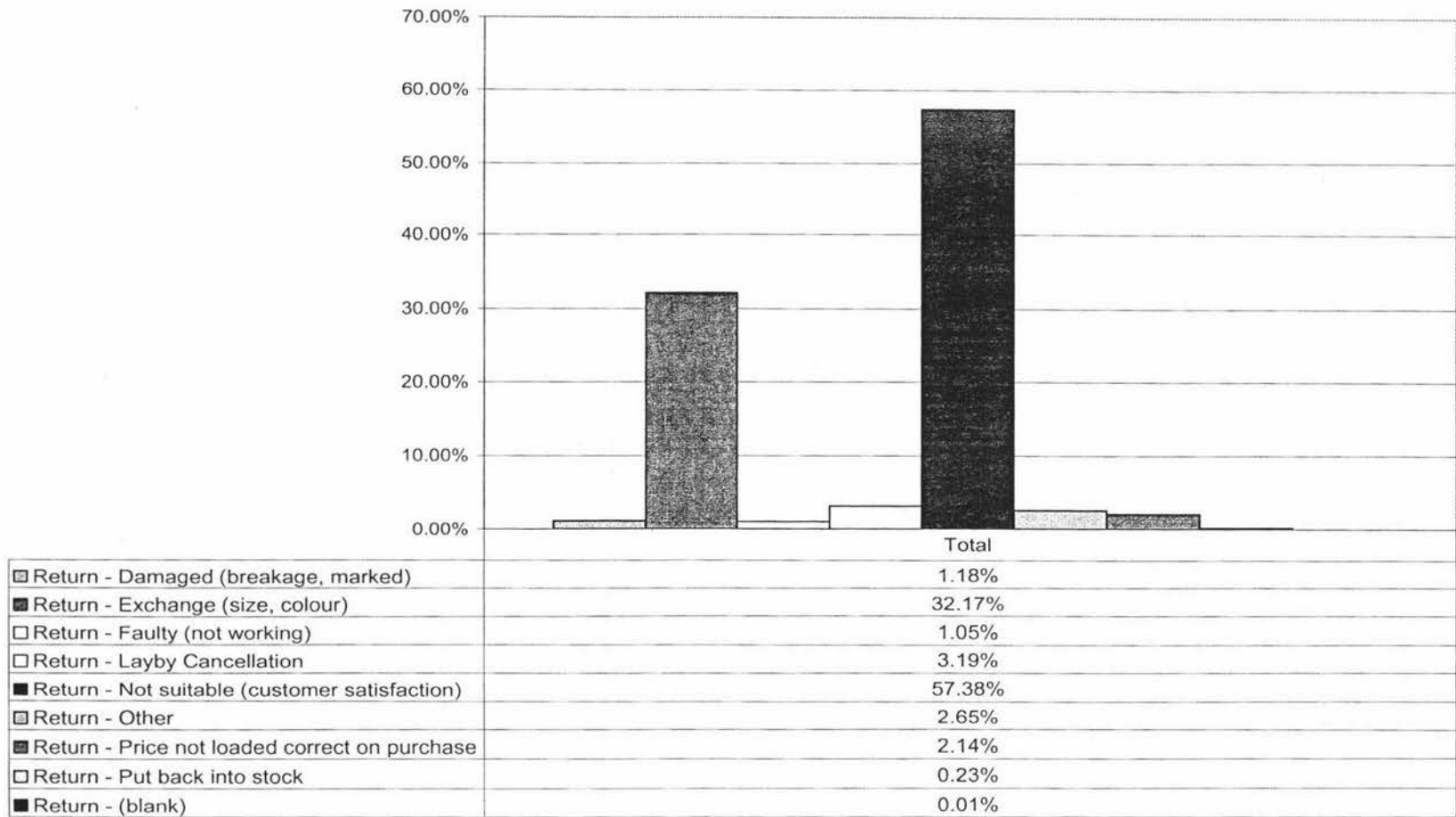


Figure 48 - Breakdown by Returns type – Mens Outerwear

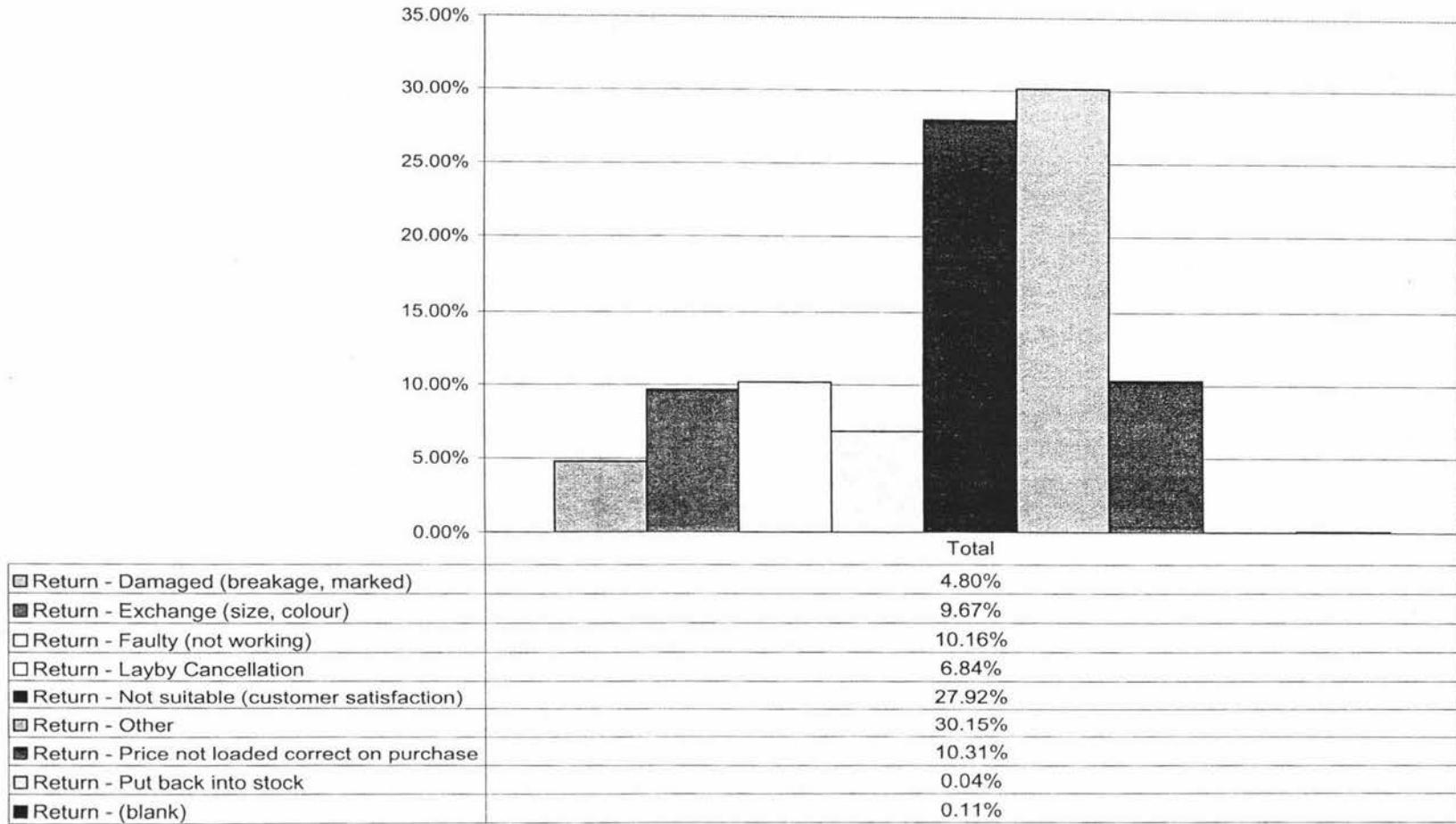


Figure 49 - Breakdown by Returns type – Music

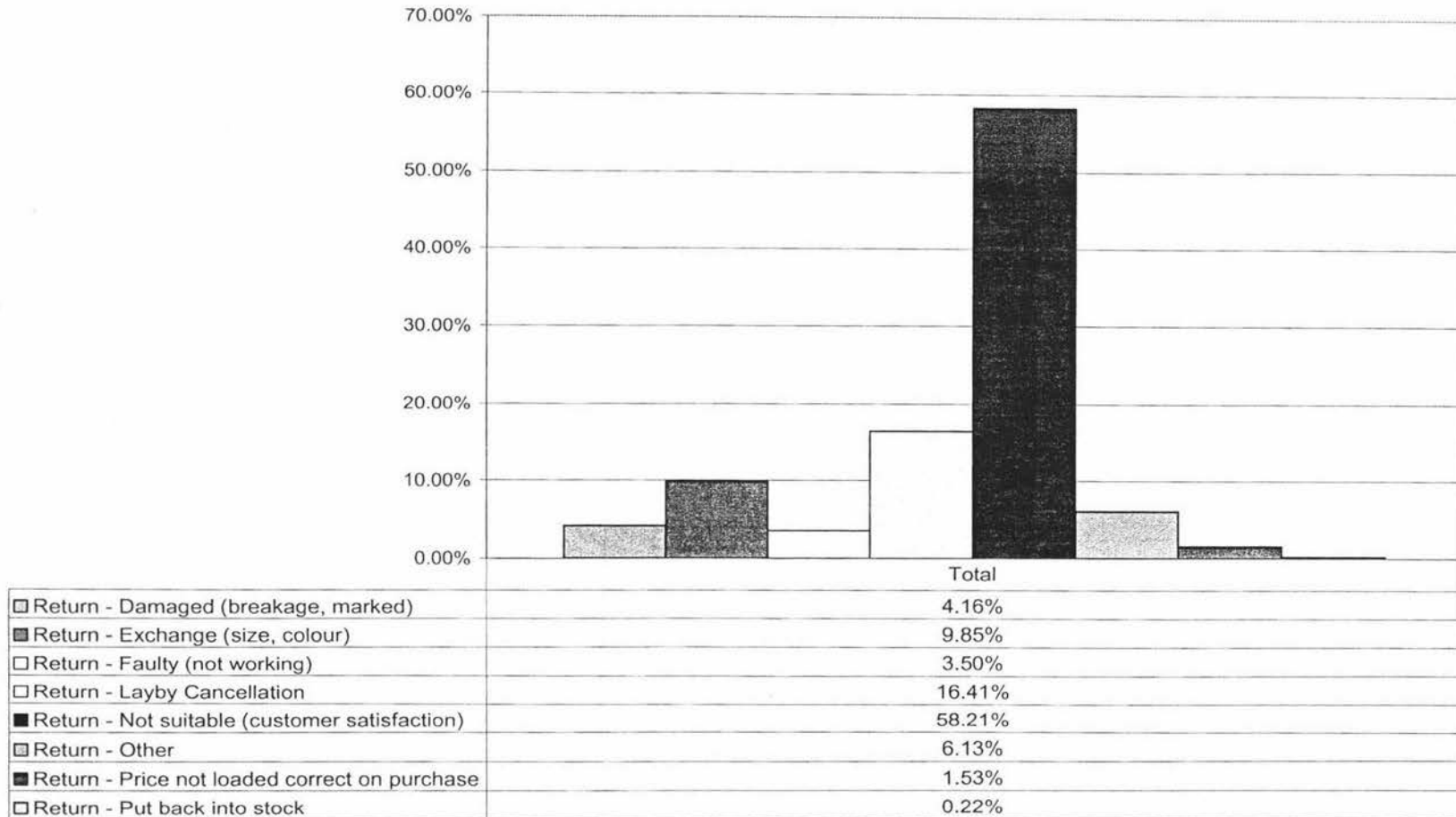


Figure 50 - Breakdown by Returns type – Nursery

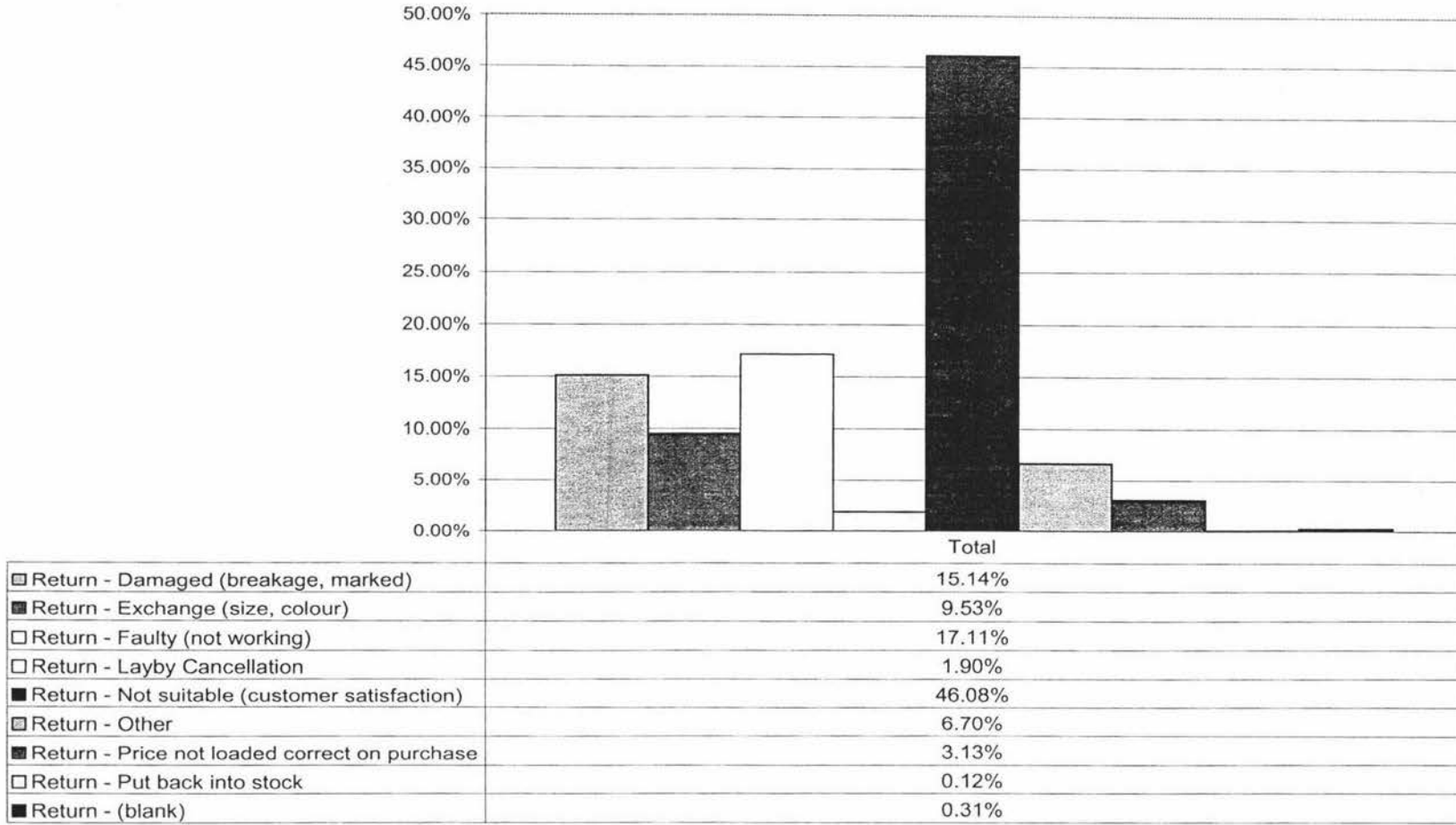


Figure 51 - Breakdown by Returns type – Outdoor Living

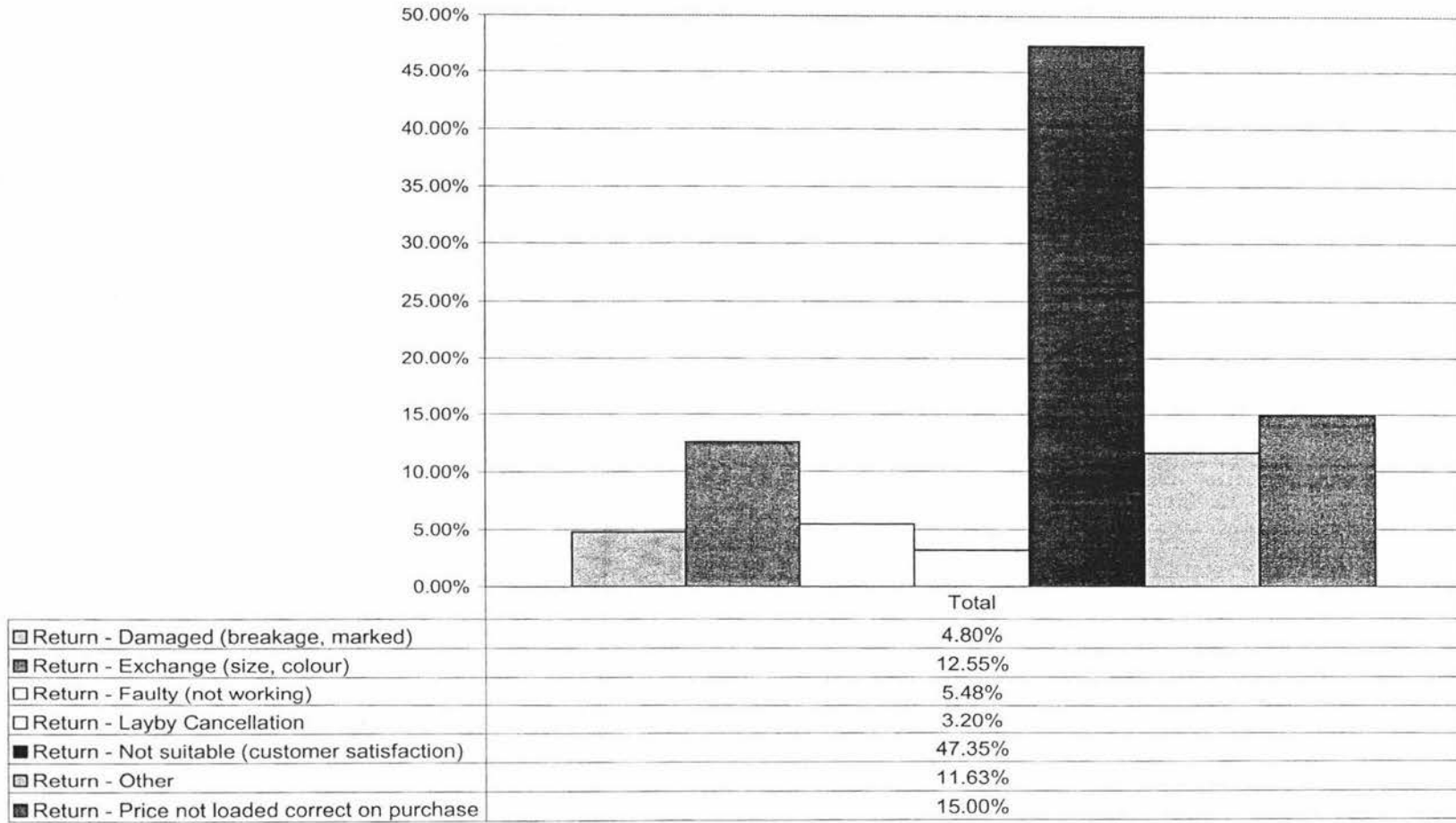


Figure 52 - Breakdown by Returns type – Petcare

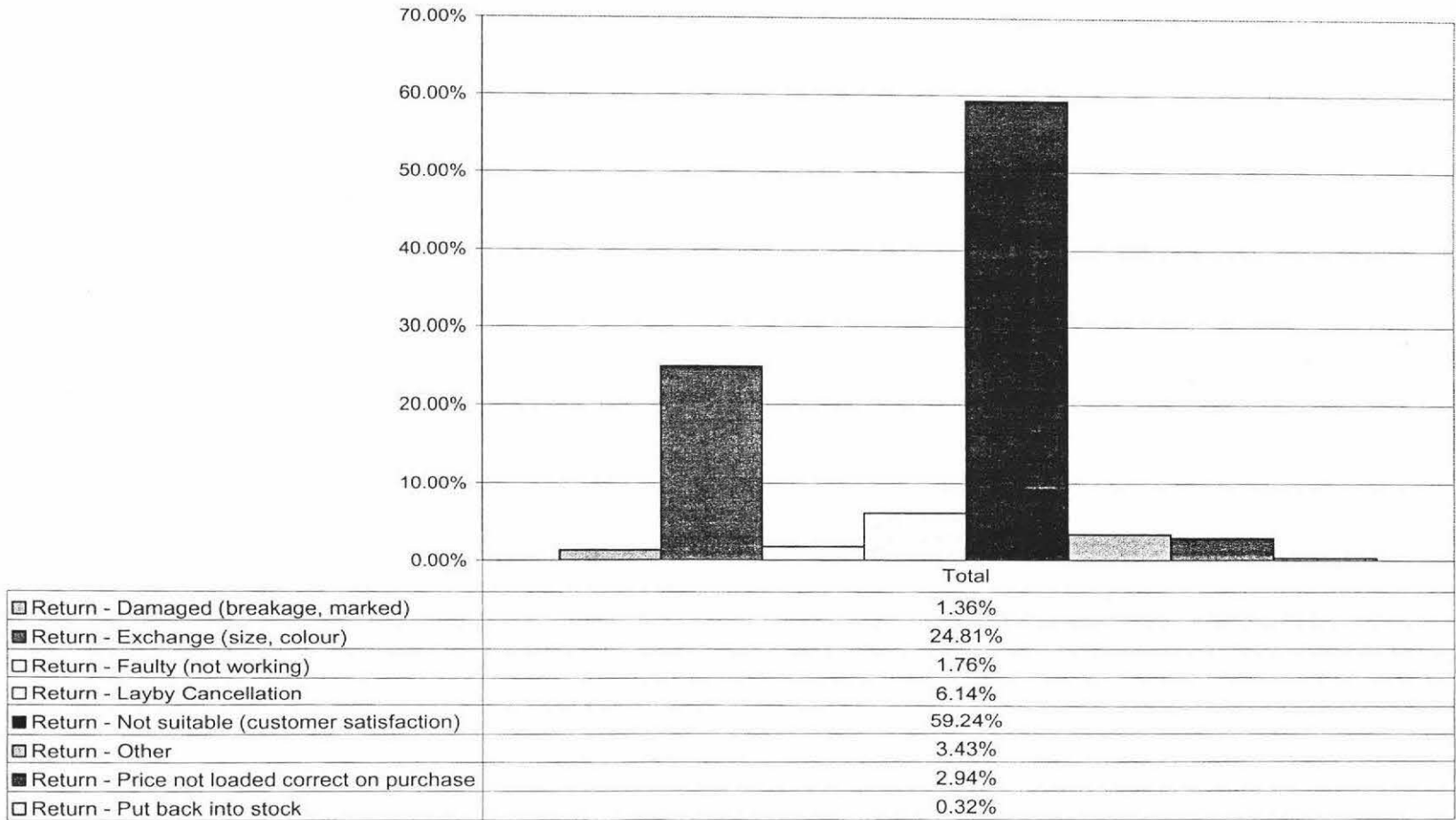


Figure 53 - Breakdown by Returns type – Sleepwear

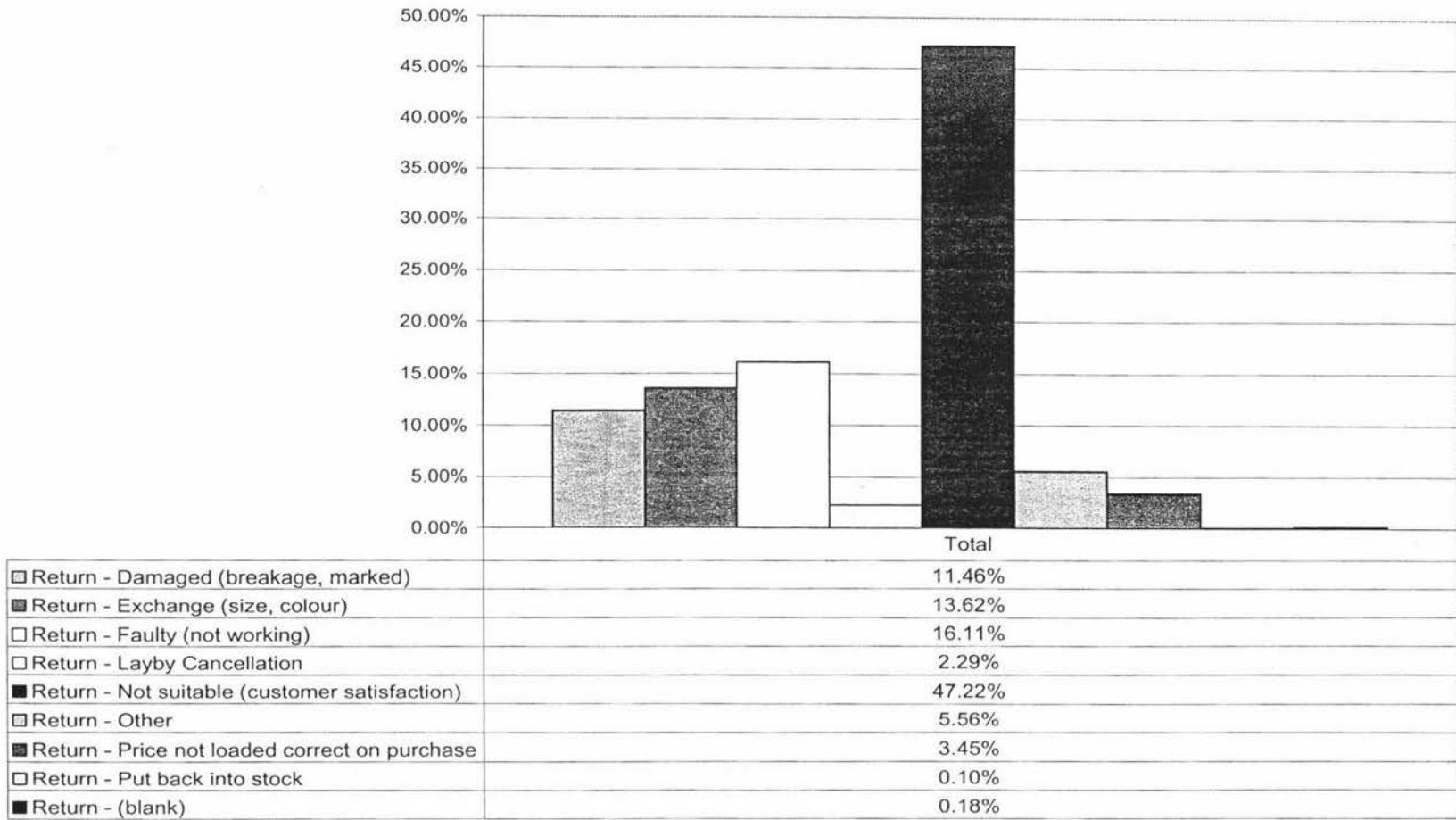


Figure 54 - Breakdown by Returns type – Sporting

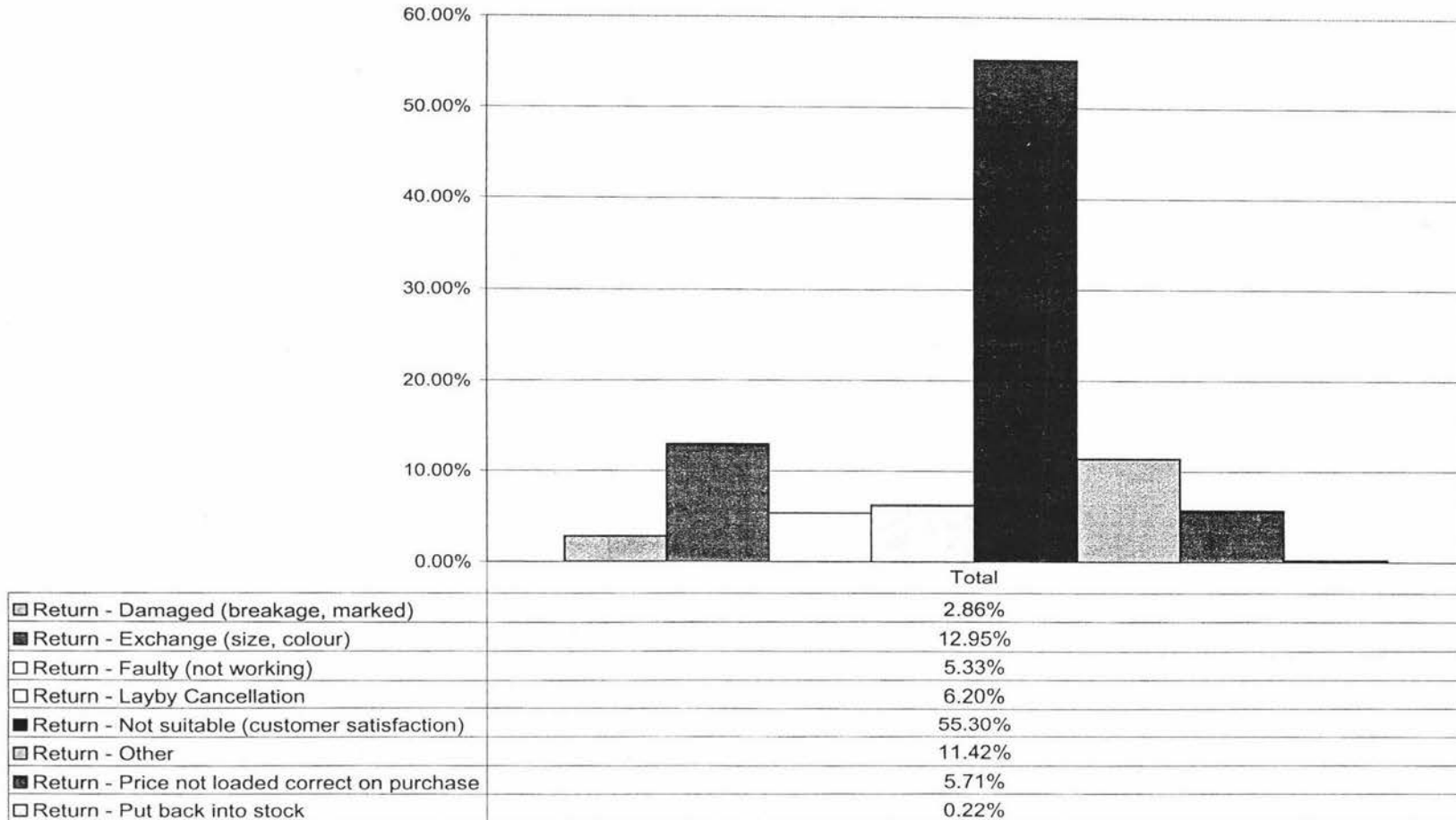


Figure 55 - Breakdown by Returns type – Stationery

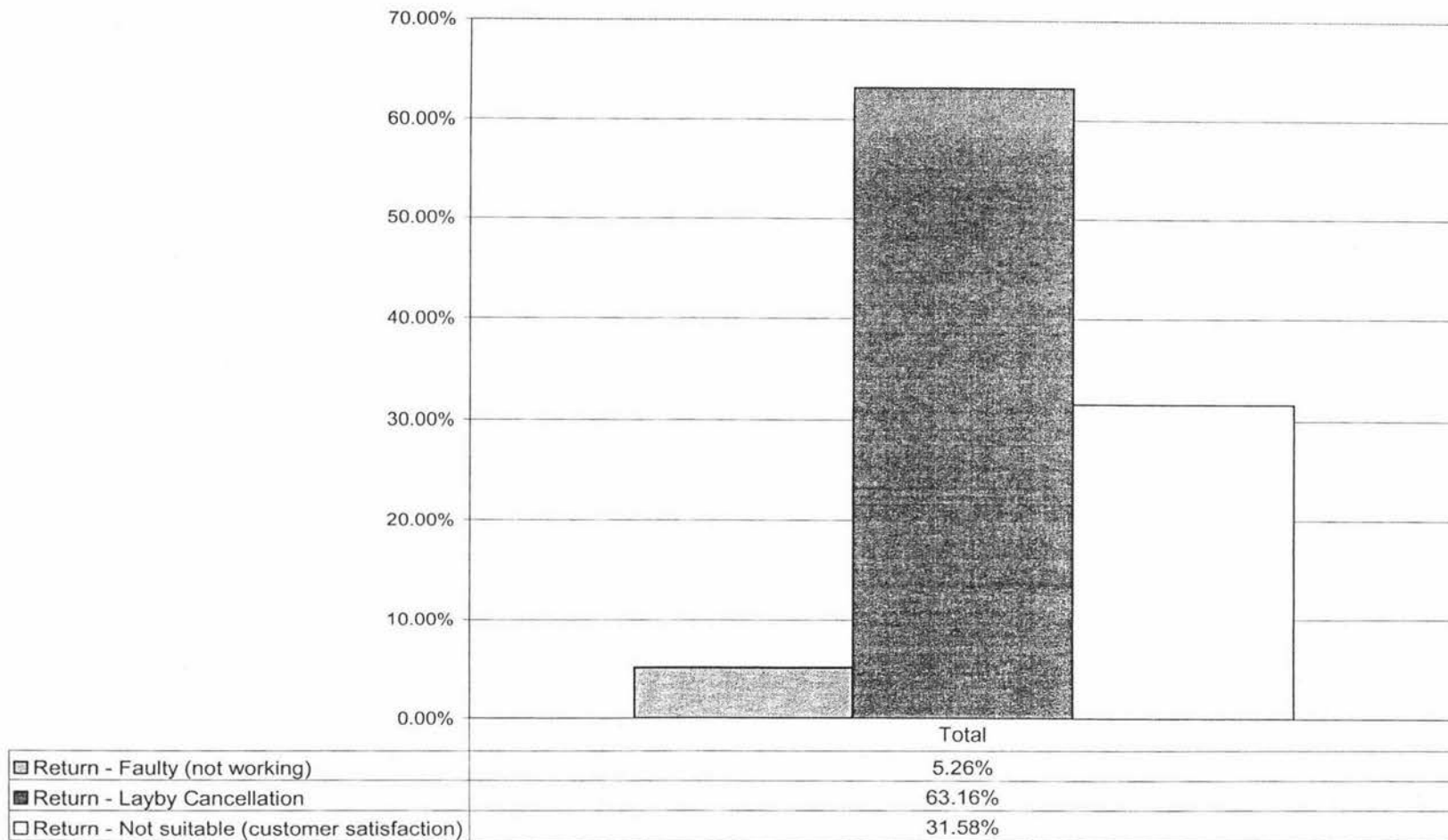


Figure 56 - Breakdown by Returns type – Thermal Underwear

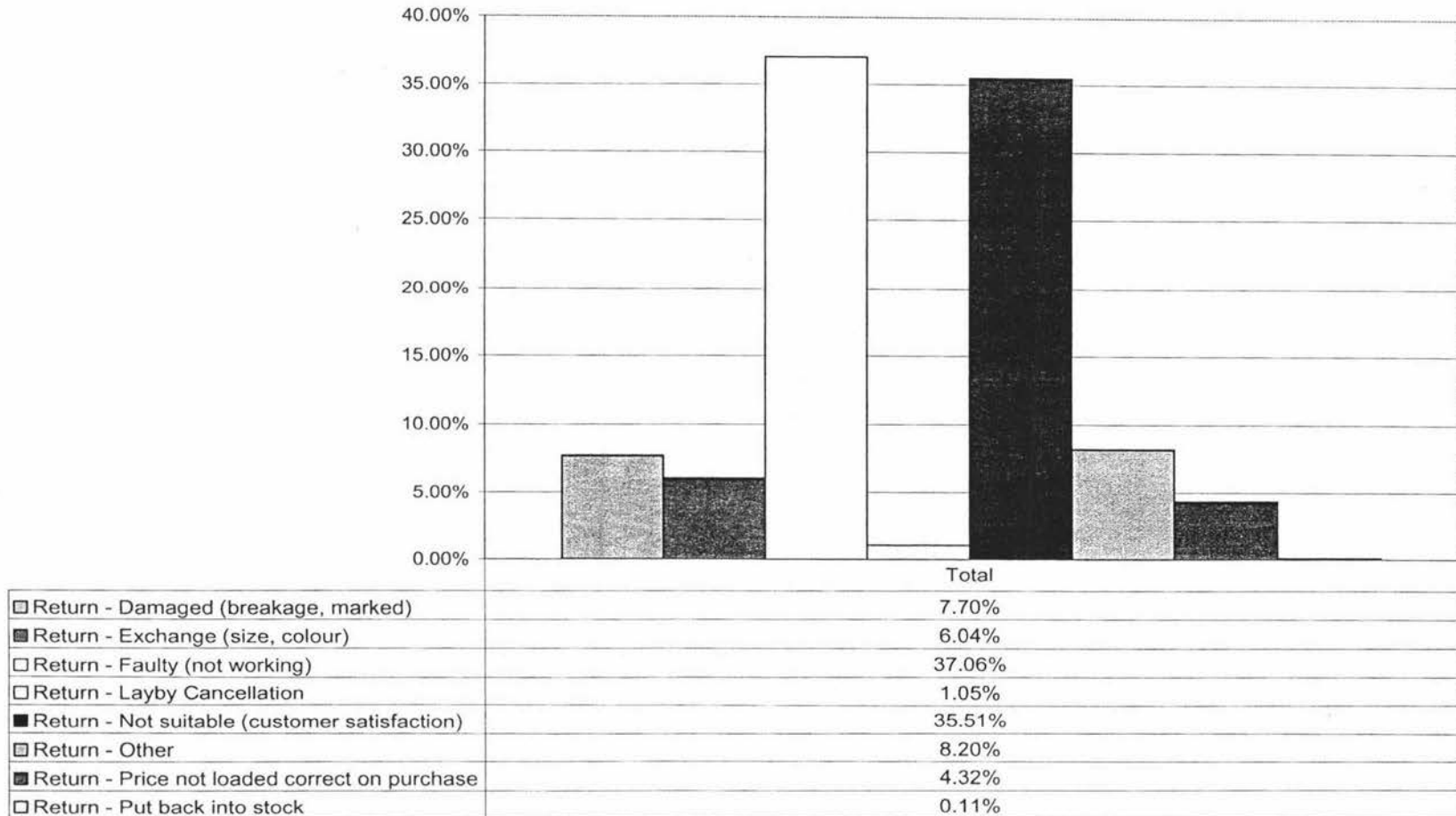


Figure 57 - Breakdown by Returns type – Tools

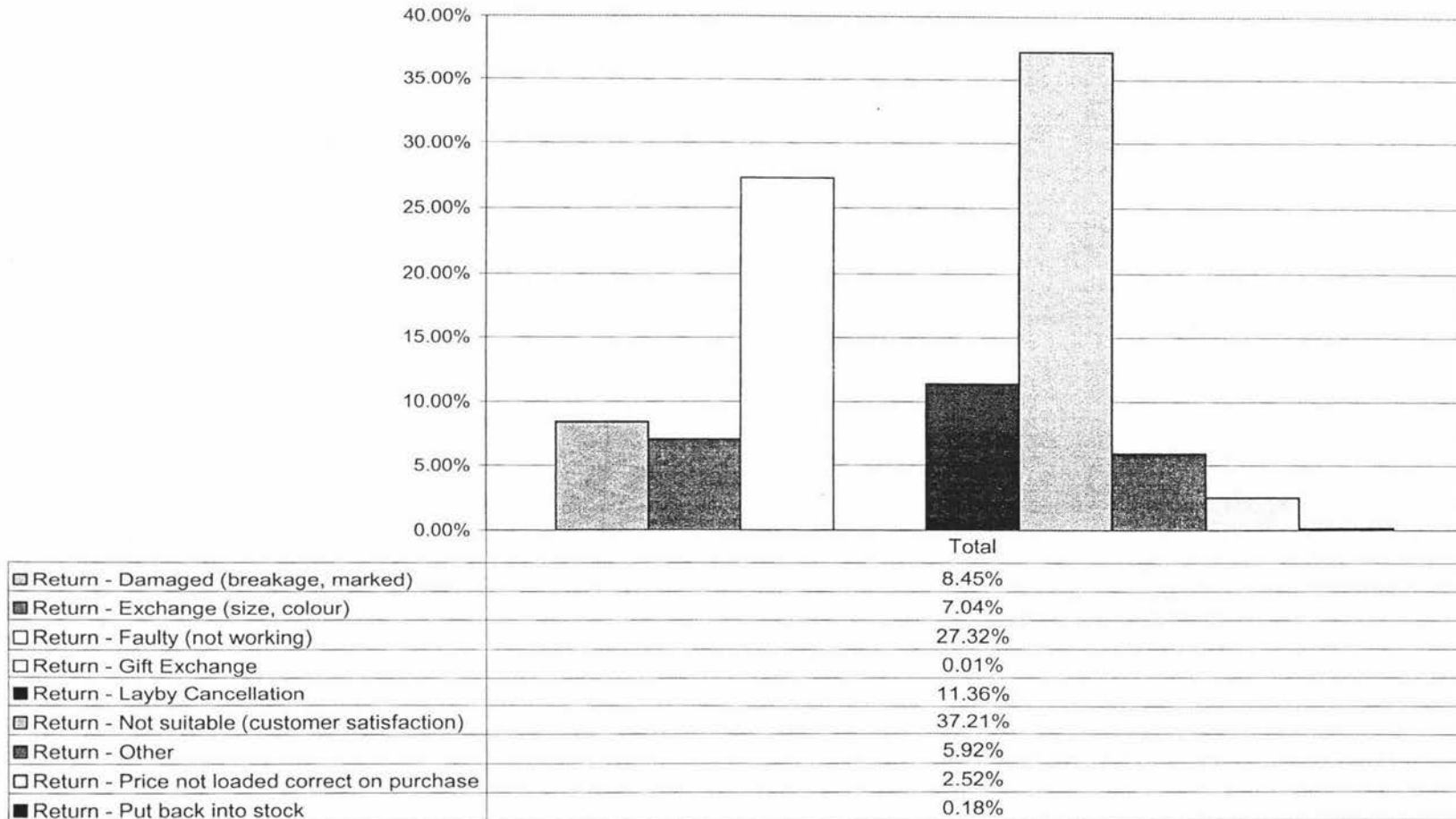


Figure 58 - Breakdown by Returns type – Toys

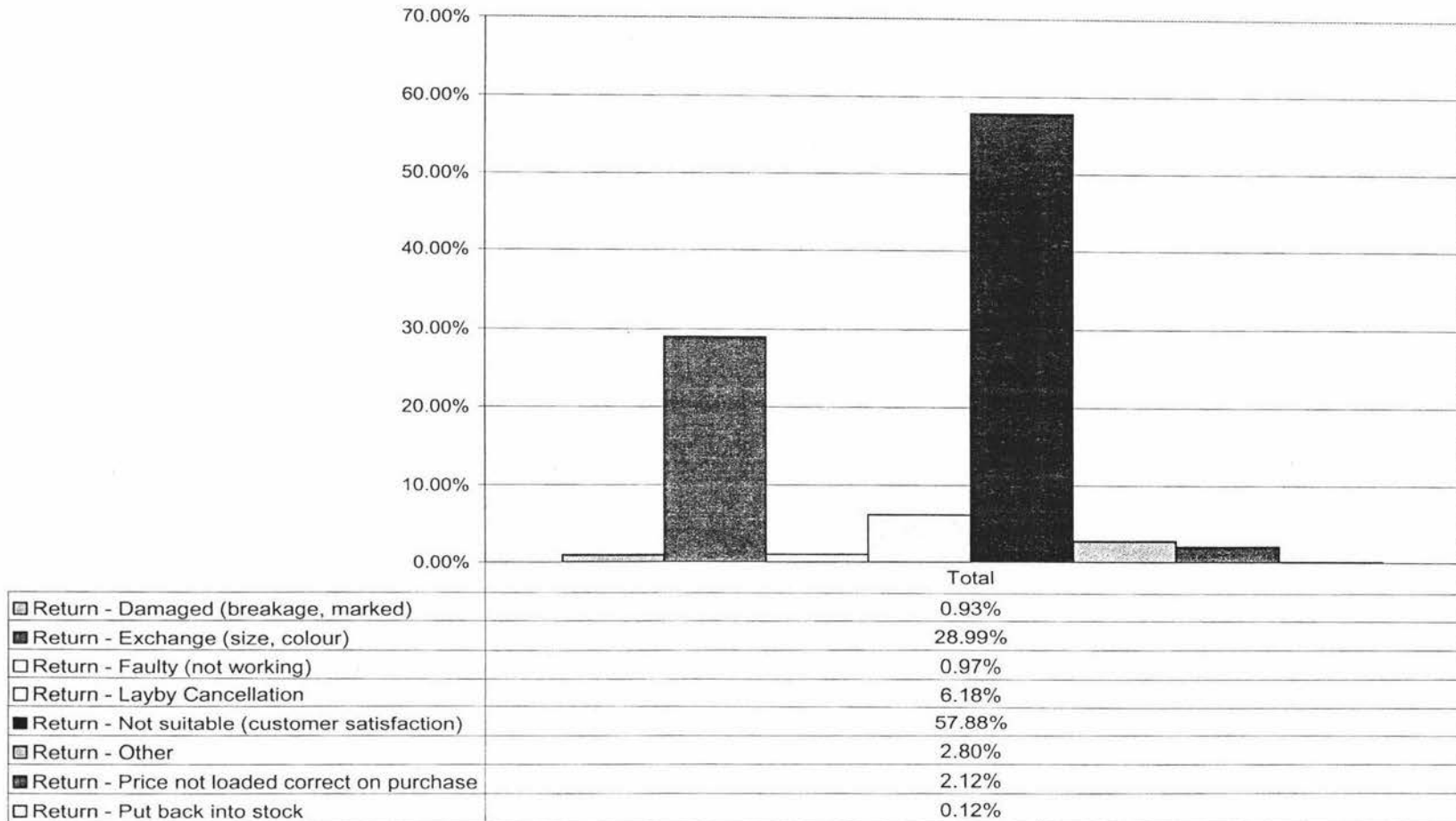


Figure 59 - Breakdown by Returns type – Underwear

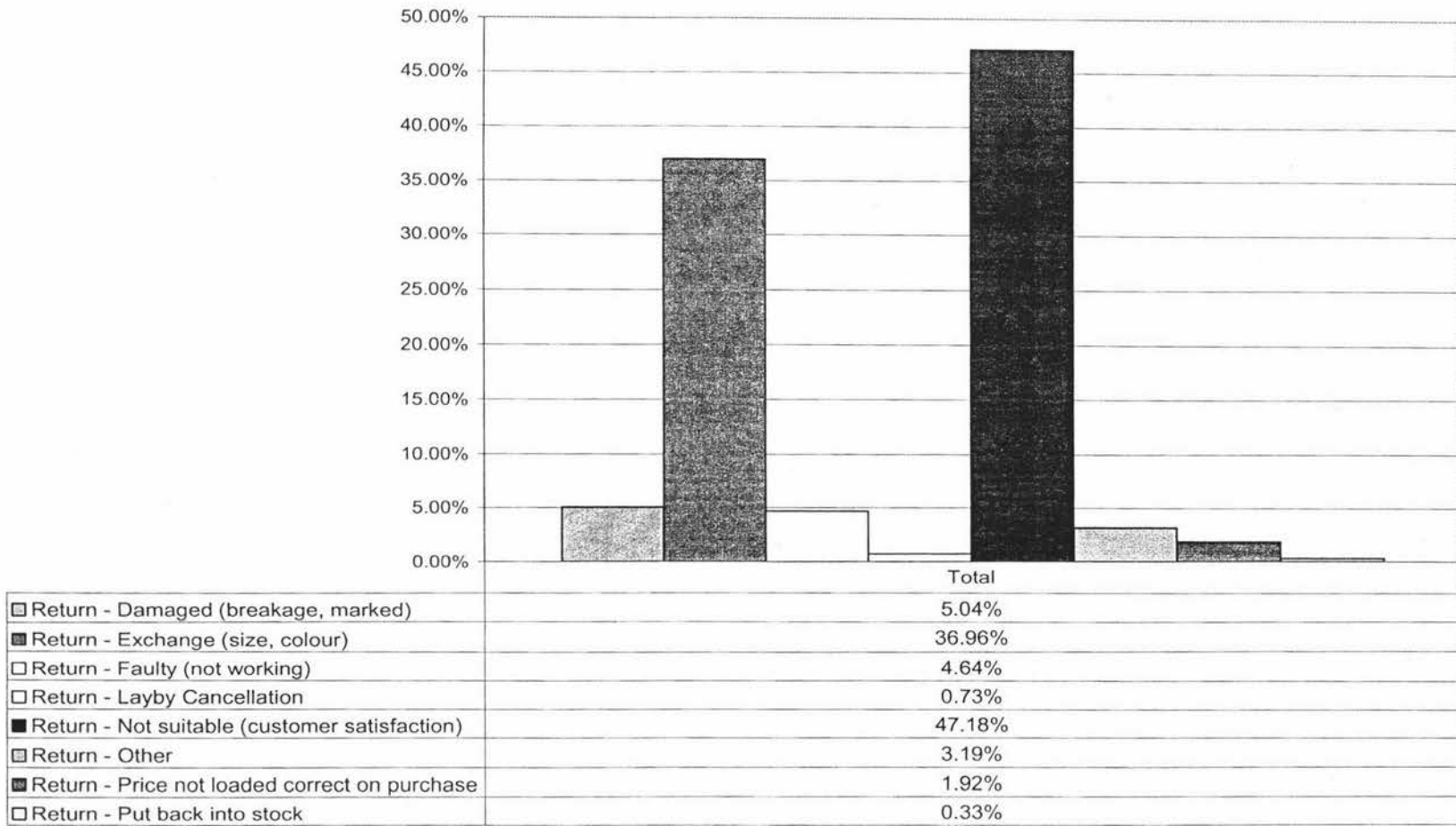


Figure 60 - Breakdown by Returns type – Unisex Footwear

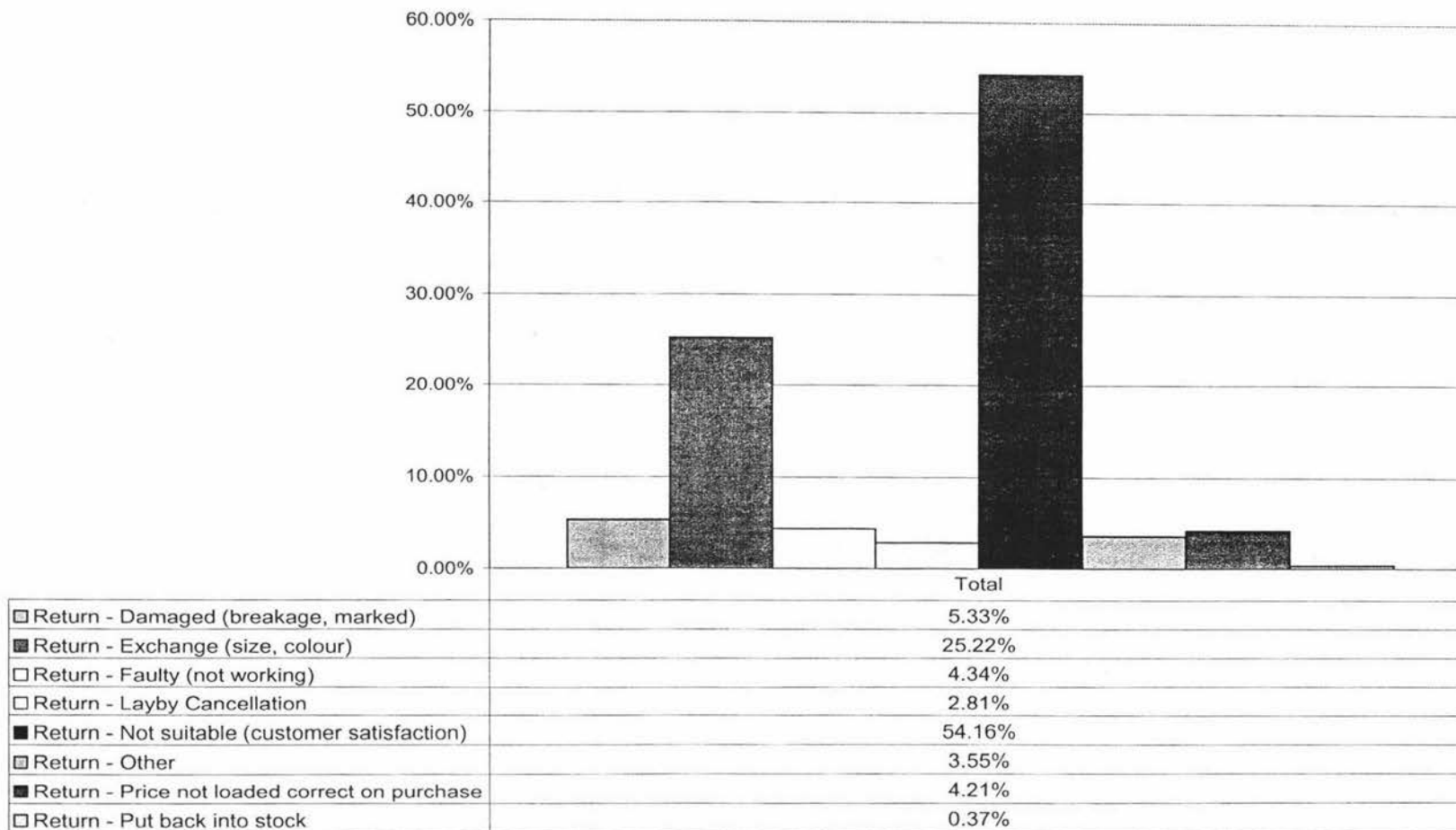


Figure 61 - Breakdown by Returns type – Womens Footwear

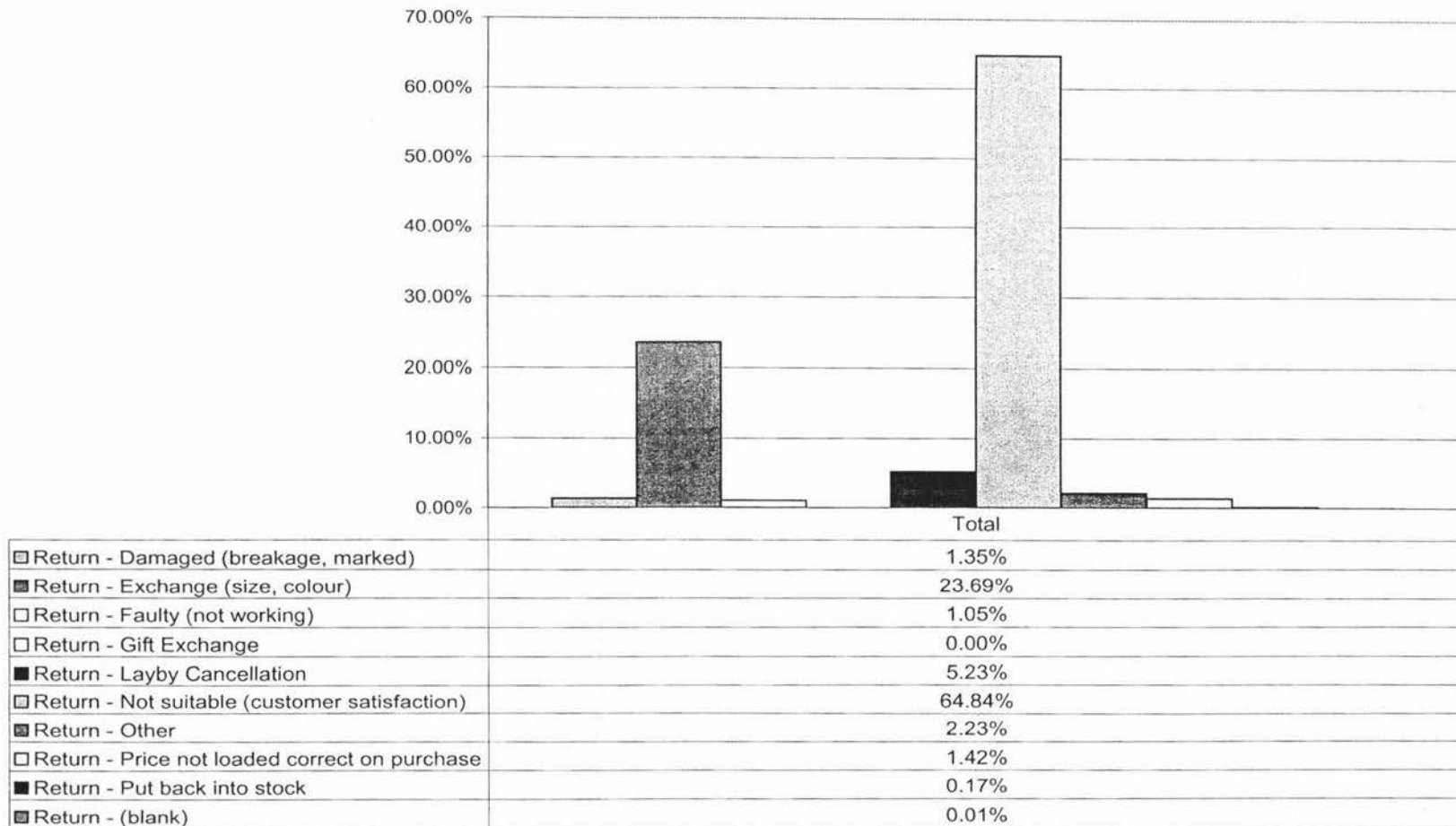


Figure 62 - Breakdown by Returns type – Womens Outerwear

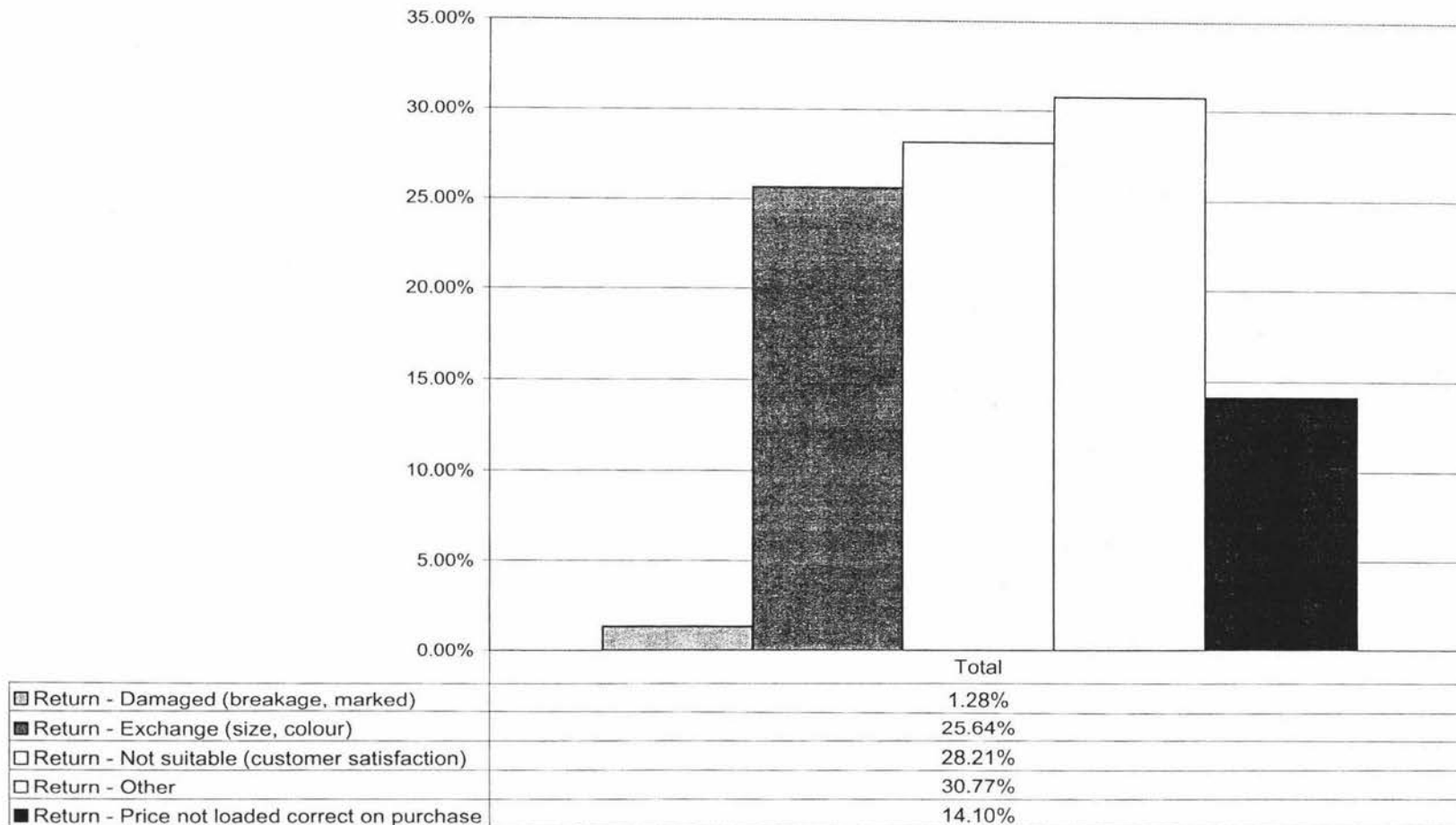


Figure 63 - Breakdown by Returns type – Packaged Bread and Small Goods

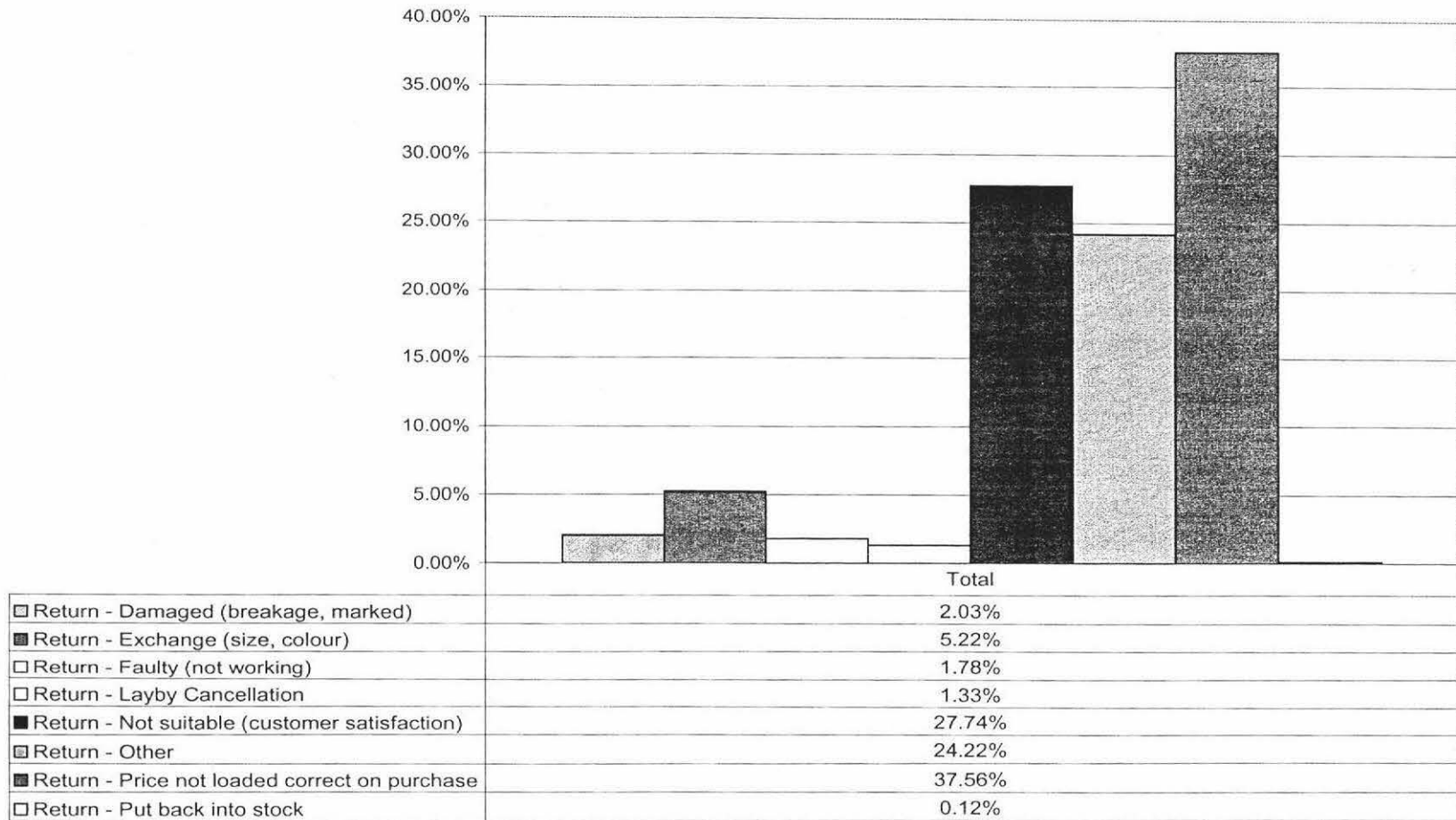


Figure 64 - Breakdown by Returns type – Snacks and Confectionary