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**Job role clarity: A missing component of supply chain visibility**

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## Job role clarity: A missing component of supply chain visibility

### Abstract

- **Purpose** - The paper aims to develop a methodology for designing job roles with a core set of knowledge requirements, skill sets, and activities adaptable to different contexts, contributing to job role clarity as a dimension of supply chain visibility.
- **Design/methodology/approach** - The study undertook a multi-method approach, including an archival study of over a thousand job adverts, published professional recruitment documents, and qualitative analysis of expert focus groups. Detailed data coding was followed by applying "Bloom's taxonomy to establish strategic, tactical, and operational knowledge and skills requirements for indicative job roles.
- **Findings** - The developed methodology created a framework relating specified job role characteristics, detailing knowledge and activity requirements and training needs. With a core set of evolving identifiers, the job role enabled local adaptation to be accessible at various levels of local, national, and international markets.
- **Research limitations/implications** - The methodology was focused on the work of expert teams and would benefit from the addition of a data-driven component based on machine learning technologies.
- **Practical implications** - The 5-step methodological approach leads to a framework for determining job role requirements, applicable in different contexts and situations across a supply chain, using a standard template to enhance visibility to all participants. The framework reduces job ambiguity while contributing to supply chain visibility by clarifying job roles, and identifying requirements and training needs for each defined job role.
- **Originality/value** - The value gained from using the developed methodology is that SCM managers and departments can work closely with HR departments to understand the primary skills, knowledge gaps, and training necessities. The benefit is gained by the individual, the organisation, and the specific sector with comparable job roles to provide consistency for recruitment requirements, pay scales and remuneration, and training and education requirements across and between supply chains.

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### 1.1. Keywords

*Supply Chain Management, Human Resource practices, Fashion Retailing, Knowledge acquisition, SCM competency, Skills*

**Paper type:** Research paper

## 2. Introduction

The impact of natural and disruptive events, such as the grounding of the Ever Given in the Suez Canal in 2021, the Covid-19 pandemic, and consequential delays in throughput at ports and container replenishment (Ivanov, 2020) have impacted the drive for more predictable and reliable supply chains (Choudhary *et al.*, 2023). However, supply chains have become more complex, leading to ambiguity in job roles and expectations, compounded by the rise of online business activity and increased technological challenges (Mola *et al.*, 2017). To be competitive with global supply dominated by e-commerce and responsive supply chains, organizations must concentrate on talent development to meet their goals, especially in ICT skills (Ronchetti *et al.*, 2020). This paper aims to address the lack of clarity and intended development plan in job roles across the supply chain, aiming for enhanced supply chain visibility.

The following sections review the literature on role ambiguity and its impact on supply chain visibility, specifically focusing on the fashion sector. It centres on existing job role platforms and approaches, clarifying the gap in this literature and a need for an improved methodical approach to enhance job role clarity and employee development. The Methodology section then introduces the approach we adopted to collect and analyse the data. As this is a methodological paper, in section 4, we discuss how the research approach was implemented how the steps evolved sequentially during the research process, and our specific findings. This process resulted in the development of the proposed framework. It is then followed by a

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3 discussion of the results and conclusions in section 5, then limitations of the research and  
4  
5 directions for future research in section 6.  
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### 8 **3. Literature review**

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10 Supply Chain Visibility (SCV) has focused on information sharing for a higher level of  
11  
12 visibility as part of supplier management that enhances close relationships between the  
13  
14 production and supporting functions within an organisation (Barratt and Barratt, 2011) and  
15  
16 across organisational boundaries between the firm and its suppliers and customers  
17  
18 (Kalaiarasan *et al.*, 2022). The supply and demand of quality information heavily depend on  
19  
20 the various "players involved in the supply chain" (Somapa *et al.*, 2018, p. 308), the quality  
21  
22 of their performance (Kalaiarasan *et al.*, 2022), and the 'quality' of information shared in a  
23  
24 sustainable collaboration (Brun *et al.*, 2020). For instance, Barratt and Barratt (2011) found  
25  
26 that despite the positive impact of shared information on operational improvements, it did not  
27  
28 contribute to high visibility. This pointed to participants' relevant knowledge and activities  
29  
30 across a supply chain to fulfil their job roles, addressing information capability and  
31  
32 competency needs (Brusset, 2016) and contributing to visibility within the supply chain  
33  
34 (Barratt and Oke, 2007).  
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40  
41 Despite the overall objective, SCV fails to consider the consistency of language within the  
42  
43 supply chain labour market and development of a universal core set of knowledge  
44  
45 requirements, skillsets and activities related to each job role across the sector. There are a few  
46  
47 studies with a focus on purchasing (e.g., Ellram *et al.*, 2020; Johnson *et al.*, 1998; Meier *et*  
48  
49 *al.*, 1998) or graduates' recruitment in the supply chain, but they do not extend to the whole  
50  
51 supply chain labour market. For instance, Jordan and Bak (2016) identify a list of key  
52  
53 graduate skills needs but do not consider the constantly evolving nature of the supply chains.  
54  
55 Dobroszek (2020) extended their study to the impact of ambiguity in occupational profiles  
56  
57 and concluded that sustainable supply chains could not exist without effective and transparent  
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2  
3 detailed profiles and performance measurements for supporting visibility in supply chain  
4  
5 management. The findings of these studies indicate job role ambiguity across the  
6  
7 international labour market, causing further disruption during the recruitment and talent  
8  
9 development process and impacting product supply, delivery and financial exchange (Caridi  
10  
11 *et al.*, 2014).  
12  
13

14  
15 As a broader issue beyond visibility in the supply chain, the intersection between Human  
16  
17 Resource Management (HRM) and Operations Management as independent focus areas has  
18  
19 rarely been explored (Boudreau *et al.*, 2003), the former perceived to be led by HR and the  
20  
21 latter by line managers. The studies that explore the interface between the two are commonly  
22  
23 motivated by requirements of competitive advantage and competitive priorities, hence  
24  
25 exploring how the two can enhance each other (e.g., Vivares-Vergara *et al.*, 2016). In their  
26  
27 paper, Jackson *et al.*, (2014) propose using systems thinking in strategic HRM to address the  
28  
29 concerns of multiple stakeholders and provide greater relevance to the world of work. Schuler  
30  
31 *et al.*, (2011, p.506) bring the various aspects of the debate together through “global talent  
32  
33 challenges” including “talent shortages, talent surpluses, locating and relocating talent, and  
34  
35 compensation levels of talent” and a need for effective global talent management to enable  
36  
37 sustainable competitive advantage.  
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42  
43 This leads to the paper’s aim, which is to address this gap by developing a methodological  
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45 approach to determining job roles as a content-based representation of each role that enables  
46  
47 job role visibility and effective talent management. The European Supply Chain has been  
48  
49 chosen as a case study due to its integrated links while maintaining the independence of  
50  
51 country-specific requirements, demographics, and limitations.  
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54  
55 This leads to the research question: How can job role clarity inform talent management needs  
56  
57 across occupational titles supporting supply chain visibility?  
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### 3.1. Role Ambiguity as a barrier to SCV

Role ambiguity has been defined as information deficiency as a mismatch or a lost link between the information available to the worker and what they need to perform in their role (Ivancevich and Donnelly, 1974). Further, combined with the unpredictability of the tasks (Pearce, 1981), individuals and firms have had negative outcomes. Role clarity, on the other hand, has often been associated with clarity of tasks (Orgambidez and Almeida, 2020), clarity of goals and objectives (Stazyk *et al.*, 2021) and clarity of success measures (Xin *et al.*, 2020).

Alternatively, Bauer and Simmons (2000, p.42) categorise aspects of ambiguity as Goal/Expectation/Responsibility Ambiguity, Process Ambiguity, Priority Ambiguity and Behaviour Ambiguity. The ambiguity about job roles has been identified with a variety of impacts, including a positive relationship with job tension (Lyons, 1971), anxiety (Upson *et al.*, 2007), burnout (Ro and Lee, 2017), a negative relationship with job satisfaction and performance (June and Mahmood, 2011), and career outcomes and potential vertical or horizontal movements (Tremblay and Roger, 2004).

At the same time, role clarity has been reported to have a positive impact on job satisfaction and commitment (ul-Hassan *et al.*, 2021), higher role efficacy (Bray and Brawley, 2002), employee and business performance (Ahmed *et al.*, 2017), employees' perception of service quality and with a negative impact on employee turnover (Mukherjee and Malhotra, 2006).

There have been studies in support of role ambiguity as well, and its impact on job control, autonomy, boundary spanning, and mitigation of functional ambiguity (Singh, 1993), talent management (Kotzab *et al.*, 2018), and consequently, job satisfaction (Jong, 2016). This is an ongoing debate that, on the one hand, discourages role ambiguity due to its wide range of negative impacts and, on the other hand, considers its relevance to autonomy and job

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2  
3 satisfaction. This paper introduces a methodology to navigate and balance the two topics,  
4  
5 considering national and organisational contexts, job role architecture and talent management  
6  
7 focusing on supply chain management.  
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9

10 In a supply chain, as an extended series of roles and activities, role ambiguity further extends  
11  
12 between the roles, resulting in uncertainty about the authorities and obligations between the  
13  
14 buyer and the seller in the collaborative relationship (Coelho, 2011). This research focuses on  
15  
16 the fashion industry as a rich case study due to its characteristics as a dynamic and extended  
17  
18 collection of tasks and activities while having similarities with other industries as reviewed  
19  
20 below.  
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23  
24

### 25 3.2. Fashion Sector Role ambiguity

26  
27 The fashion sector is characterised by a vastly globalised manufacturing supply chain  
28  
29 employing 3.45 billion employees and a global revenue estimated at approximately \$2.0  
30  
31 trillion (World Bank Open data, 2021). It is an international fast-changing and dynamic  
32  
33 environment with unpredictable customer requirements that constantly require updating and  
34  
35 revising talent skills and competencies (Boström and Micheletti, 2016). These attributes are  
36  
37 also observed in agile supply chains from other sectors, such as automotive, technology and  
38  
39 food, where visibility has become an essential dimension of extended sourcing requirements  
40  
41 (Bruce *et al.*, 2004).  
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46 The range of job titles in the fashion sector can vary significantly between and within  
47  
48 organisations depending on organisational structures, positions, and location-based factors  
49  
50 (Rana and Zhao, 2018). Further, technology advancements and new information systems  
51  
52 have resulted in the introduction of new roles and functions into the fashion labour market,  
53  
54 more dynamic job role requirements (Rossetti and Dooley, 2010), and the development of  
55  
56 vertical information systems to enable cross-functional teams' operations especially when  
57  
58 developing new products (Ellram *et al.*, 2020). These factors, while contributing to workers'  
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1  
2  
3 occupational identities (Walińska and Dobroszek, 2021), add further confusion and  
4  
5 disorientation in the labour market. Employees within the fashion industry indentify a need to  
6  
7 develop self-efficacy through a clear understanding of their career options based on their  
8  
9 skills, knowledge, and experiences (Frazier and Cheek, 2005).

10  
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12  
13 These changing role requirements are also evidenced in missing soft skills in job descriptions,  
14  
15 impacting responsive buyer-supplier relationship (Wiedmer *et al.*, 2020) and disparity in  
16  
17 sales communication, where the supplier perceives the process as a potential sale, while the  
18  
19 buyer assumes it as a sale in its final stages (Dong *et al.*, 2016). It has further resulted in  
20  
21 filling senior positions with inadequately experienced individuals (Johnson *et al.*, 1998) with a  
22  
23 mismatch of skills and competencies to the role requirements (Goworek *et al.*, 2020).

24  
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26  
27 These examples point to the dynamic nature of the fashion sector, requiring agile strategies,  
28  
29 decisions, and actions (Meier *et al.*, 1998), which heavily depend on the availability and  
30  
31 variety of the constantly changing knowledge and competencies within the organisations  
32  
33 (Masson *et al.*, 2007). These factors necessitate a sustainable labour market with a universal  
34  
35 understanding of roles and responsibilities, as well as standardised communication of those  
36  
37 roles and their knowledge requirements to fulfil the intended tasks (Nakabayashi, 2017).

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41 However, job roles and their corresponding advertisements tend to be either completely  
42  
43 predefined, sometimes ignoring the reflections of cultural needs or sudden economic changes  
44  
45 within each role (Walińska and Dobroszek, 2021), or defined with a variety of job titles with  
46  
47 varying requirements for similar roles. This lack of clarity and adaptability further challenges  
48  
49 talent management and development across the labour market.

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53 As a result, we identify ‘job role visibility’ as a missing dimension of supply chain visibility  
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55 caused by a lack of a dynamic methodology and a fitting platform. We highlight a need for a  
56  
57 standard platform for clarity of job role requirements that is responsive and evolving  
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3 following the local, national, and international market requirements and enables talent  
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5 development. The review of existing methodologies and platforms in the next section  
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7 indicates the progress to date and clarifies the methodological gap.  
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### 10 3.3. Existing Job Role platforms and the methodological gap

11  
12 With the purpose of role clarity, digital platforms for job seeking, human resource  
13  
14 management, and training (Brunello and Wruuck, 2021) have contributed to an initial step in  
15  
16 standardisation of terminology, consistency, and semantic clarity of job roles. An effort for  
17  
18 standardising job descriptions started several decades ago with international classifications  
19  
20 such as the “Standard Classification of Occupations” (ISCO, 2010) of the International  
21  
22 Labour Organization (ILO). Such classifications initially contributed to statistical studies,  
23  
24 forecasts, and policy formulation; however, they lacked a focus on aspects of job  
25  
26 requirements. In another attempt, the European Parliament (European Communities, 2007)  
27  
28 identified critical competencies for career and lifelong learning. These requirements provided  
29  
30 a valuable basis for consistency across the range of job roles in a supply chain. However, they  
31  
32 did not connect to specific roles or industries; hence, there is a need for a more detailed  
33  
34 platform for role requirements and characteristics. The ‘European Skills, Competences,  
35  
36 Qualifications and Occupations’ (ESCO) (European Commission, 2022) and the  
37  
38 Occupational Information Network (O\*NET) (National Center for O\*NET Development,  
39  
40 2023) are the most notable internationally influential job-related standardisations in digital  
41  
42 form, which attempted to close the gap between the classification of occupations and their  
43  
44 related competencies. They organised occupations in hierarchies with both essential or  
45  
46 optional skills/knowledge elements and qualifications and provided links informing which  
47  
48 occupations were related to which set of competencies. The ESCO classification contains  
49  
50 3,000 occupations and 13,000 skills and competencies, available in 27 languages, and hence  
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3 has been used by multiple projects and researchers in relation to problems such as skill  
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5 matching and education development (Brunello and Wruuck, 2021).  
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8 However, we argue that the assignment of skills to occupations, i.e., to job titles, is not  
9  
10 expressive enough and consequently not efficient, at least for describing job positions in  
11  
12 specialised areas such as the fashion industry, nor for defining knowledge requirements  
13  
14 associated with highly focused aspects, such as supply chain visibility. For instance, Mirski *et*  
15  
16 *al.*, (2017) incorporated ESCO classification in the openSKIMR project (Open European  
17  
18 Skill Match Maker, 2019) to build a tool, an automated matching system between applicants'  
19  
20 skill sets and a specific job's required skill sets. OpenSKIMR, however, solely relied on the  
21  
22 existing ESCO job description model, which did not reflect some highly evolving and  
23  
24 challenging areas, such as supply chain visibility. Consequently, Chiarello *et al.* (2021) point  
25  
26 to a need for essential updates to ESCO classifications, considering the rapid technological  
27  
28 changes, including Industry 4.0.  
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33  
34 Ontology-based approaches in digital form are among the typical tools to organise and  
35  
36 describe job roles and the associated tasks, skills, and knowledge, as well as to match job  
37  
38 titles with qualifications and education needs (Khobreh *et al.*, 2016). They aimed to allow  
39  
40 advanced computerised matching based on semantics rather than keywords and adapted the  
41  
42 generic NeOn ontology development methodology to an ontology-based framework. It  
43  
44 created a semantic representation of 'that which is taught in VET' (Vocational Education and  
45  
46 Training), 'that which is required on the job' and 'how the two are related'. They defined jobs  
47  
48 as lists of tasks, which are themselves tasks as clusters of activities or sequences of related  
49  
50 activities directed at specified objectives. They used the concepts of 'Task, Competence and  
51  
52 KSA (Knowledge/Skill/Ability)' and applied the framework to specific occupation types,  
53  
54 such as nursing. However, they did not consider specific characteristics of job roles, their  
55  
56 associated theoretical and practical activities, nor the underpinning knowledge requirements.  
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3 While the flagship projects of ESCO and O\*Net are based on the work of expert groups,  
4  
5 another approach to specification of framing standards is data-driven. Considerable research  
6  
7 is performed in automatic knowledge extraction from data, employing text mining and other  
8  
9 machine-learning methods (Rentzsch and Staneva, 2020). As a representative case of the  
10  
11 data-driven methodology, Cloud Talent Solution developed by Google is used inside the job  
12  
13 search feature of the Google search engine (Posse, 2016). They aimed to link the O\*Net  
14  
15 ontology with their proprietary ontology by extracting occupation descriptions and skills  
16  
17 from millions of job postings found on many company websites. The methods included a  
18  
19 phase of job advertisement title standardisation and classification, and finally, they were  
20  
21 organised into a job ontology. It resulted in 30 broad job categories with 1,100 occupation  
22  
23 families, 250,000 specific occupations, and skills, detected in job seeker queries and mapped  
24  
25 in a skill ontology. Machine-learning methods then interlinked skills and standardised job  
26  
27 titles. Despite its solid bases, it does not reflect circumstances where the standard  
28  
29 classifications do not apply or emerging sectors and occupations are involved (Rihova, 2016),  
30  
31 such as the case of the fashion industry. Further, supply chain planners and analysts' selection  
32  
33 is often driven by an interviewer's subjective criteria, distorted by job title definition  
34  
35 subjectivity and the personal preferences of hiring managers (Flöthmann *et al.*, 2018).  
36  
37  
38 Hence, despite the essential related efforts, the envisaged consistency and standardisation in  
39  
40 job role description have not yet been achieved across different countries and cultures,  
41  
42 leaving room for further development towards a reliable basis for information exchange. This  
43  
44 paper aims to address this gap by changing the focus from job titles to job roles as a content-  
45  
46 based representation of each role, bringing jobs with similar characteristics under the  
47  
48 umbrella of a 'job role'.  
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## 4. Methodology

This section discusses the methods we employed to collect and analyse the data to understand job titles and their characteristics and then determine knowledge, skills and activity requirements for defined job roles. We present how this methodological approach was implemented and then discuss the results from each step in section 4.

This research involved a multi-method approach, starting with archival research (of job adverts) and followed by expert interviews to collect data that framed particular job roles. We then identified the gap between the experts' knowledge of the job roles and disparities in job adverts and their requirements. Next, we employed qualitative data analysis to identify the configuration of knowledge, skills, and activities for each job role to identify the defining compositions of job roles and contribute to job role clarity across the supply chain and beyond. We addressed concerns of bias (and prejudice) using triangulation of sources and data throughout the research, where saturation indicated that further data collection and/or analysis were unnecessary.

In our analysis, we adapted Bloom's (1984) taxonomy to initially decompose every job role to its essential characteristics and competencies/knowledge requirements and then to reconstruct them based on the similarities in their components to generate indicative job roles. Bloom's taxonomy of educational objectives includes stages of knowledge, comprehension, application, analysis, synthesis, and evaluation (Athanassiou *et al.*, 2003).

We employed Bloom's taxonomy as a filter to decompose various components of each job advert as the first step in understanding the variety of job titles in the fashion industry. For our research, we categorised these stages as: 1) knowledge and comprehension, 2) application, and 3) analysis, synthesis, and evaluation. To identify job role characteristics, we call the above categories: 1) knowledge (including knowledge and comprehension), 2) skills (as the application of knowledge and comprehension), and 3) competencies/activities (as

means of analysing, synthesising and evaluating the knowledge and comprehension). We started by archival research and applied the above categories to job adverts, as discussed in Step 1. Given the limitations of existing methods and platforms, our methodology aimed at:

- Establishing core skills and knowledge required in a supply chain, employing standard taxonomies at strategic, tactical, and operational levels (Schmidt and Wilhelm, 2000), using the fashion sector as an example of a dynamic and challenging environment.
- Developing a specialised knowledge base to define job roles across a supply chain based on the identified core skills and knowledge requirements to create a job role architecture.
- Applying the methodology at individual, organisational and sectoral levels for talent development implementation.

In the next section, the implementation of the research and analysis process, as introduced above, is discussed in detail, leading to the proposed framework for job role visibility.

## 5. Analysis and Findings

The following describes the two-stage approach (Job Role Architecture and Talent Development) we employed as a methodology. The five steps lead to a framework for determining job role requirements, applicable to different contexts and situations across a supply chain and enabling effective talent development using a standard template shown in Figure 2 below.

### *2.1 Step 1. Scan information sources of Job Descriptions to Create discrete Job Roles across the supply chain – Employing the ‘strategic, tactical, and operational’ model.*

The process aimed to capture all ‘job titles’ that existed across a fashion supply chain and the descriptions associated with them to understand the scope, content, and requirements for each

1  
2  
3 job title. Two sets of data were collected to explore the job titles and descriptions: 1)  
4  
5 recruitment advertisements and documents, and 2) interviews with relevant key stakeholders  
6  
7 responsible for recruitment and selection of staff or those seeking employment in the fashion  
8  
9 sector.

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12  
13 The collected data from the job adverts included retailers with a store presence and/or an  
14  
15 online platform, operating with a network or independently, focusing on a variety of  
16  
17 customer demographics, and a range of quality and design content, including the luxury  
18  
19 segment, high street, and niche fashion markets.

20  
21  
22  
23 A team of academic experts collected and analysed data from recognised professional  
24  
25 periodicals (e.g., Retail Weekly, Retail Gazette) and newspapers. These newspapers included  
26  
27 regular job adverts for the fashion sector, online job recruitment websites (e.g.  
28  
29 fashionjobs.com) and recruitment agencies that specialised in staff recruitment across  
30  
31 Europe's fashion supply chain. To limit the scope of the research to a manageable scale, this  
32  
33 study focused on the U.K., Ireland, Italy and France with members of the research team from  
34  
35 these four countries. The countries are within the top ten listings for global apparel demand  
36  
37 and significant fashion sectors, including retail, manufacturing and sourcing expertise and  
38  
39 competencies, with related networks across Europe. The investigation included a content  
40  
41 analysis (Harwood and Garry, 2003) of the core responsibilities and functions detailed in the  
42  
43 job specifications across the fashion supply chain. We excluded job titles that were not full-  
44  
45 time, irrelevant to the fashion industry, or only related to a lifestyle business where  
46  
47 homeworking was a significant part of the job specification. This helped to provide a more  
48  
49 precise definition and framing of the content analysis and enhanced the coding and refining  
50  
51 of the collected data. For example, in the UK job market, 1,897 job adverts for different  
52  
53 fashion supply chain job titles were reviewed, and the core job functions based on the job  
54  
55 descriptions were extracted. In our analysis, job titles refer to the advertisements that list  
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1  
2  
3 activities associated with each function. The example in Table 1 is a screenshot from the  
4  
5 resulting analysis for the job titles related to Managing Director and Product Developer.  
6  
7

8  
9 Add Table 1 here  
10

11  
12 The second method sought to gain information from the interviews by exploring the four  
13  
14 main headings of responsibilities, supply chain processes, competencies, and job expectations  
15  
16 for each job title. The questions were written in English, Italian and French. The interview  
17  
18 selection criteria involved key stakeholders responsible for recruiting staff (including those  
19  
20 responsible for the Buying, Product Development, Commercial or Logistics activities) or  
21  
22 from fashion students as proxies of those seeking employment in the fashion sector. The  
23  
24 collected data involved organisations in the fashion supply chain from raw material suppliers,  
25  
26 garments, footwear, and accessories producers to online or physical store retailers.  
27  
28

29  
30 Analysis of the data collected from the two primary sources involved applying the ‘strategic,  
31  
32 tactical and operational’ filters (Schmidt and Wilhelm, 2000). It resulted in a comprehensive  
33  
34 list of all the Job Titles with descriptions of their associated activities. It also identified gaps  
35  
36 in the stakeholders’ perceptions and identifications of ‘job roles’ and the variety of job  
37  
38 adverts connected to the job descriptions. This list contained some significant anomalies,  
39  
40 such as similar job functions involved with the same activities but for different Job Titles.  
41  
42 Moreover, listed activities displayed inconsistency for similar Job Titles at the same level and  
43  
44 a misalignment of strategic, tactical, and operational descriptors between various levels of  
45  
46 activities. Hence, we used the phrase ‘job role’ to refer to a universal framing of job titles  
47  
48 with various requirements and characteristics that point to a typical job function.  
49  
50

51  
52 Based on these findings from the range of Job Titles, a thematic analysis was undertaken to  
53  
54 identify which discrete Job Roles best described the core job functions identified in the  
55  
56 different Job Titles. The analysis identified a set of discrete job roles across the fashion  
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supply chain grouped by strategic, tactical, and operational descriptors. This contribution was significant as it initiated a hierarchical framework reflecting the complexity and content of job roles simultaneously and between levels. To further validate establishing the final list of Job Roles, each partner reviewed the findings based on different country contexts, cultural considerations from geographical and demographic perspectives, and approaches to supply chain management.

**Results:** Sixteen Job Roles emerged in relation to fashion, categorised by level as shown below. During the review process, minor changes were made to the naming of the Job Roles, but no additions or deductions were required to the scoping and framing of the sixteen Job Roles. They are:

***Strategic level***

- Role 1 Managing Director (MD)
- Role 2 Buyer Director (BD)
- Role 3 Operations /SCM /Logistics Director (OD)
- Role 4 Retail /Commercial Director (RD)

***Tactical Level***

- Role 5 Regional /Store /Departmental Manager (SM)
- Role 6 Category Manager (CM)
- Role 7 Production /Operations Manager (PM)
- Role 8 Buyer (BY)
- Role 9 Merchandiser (ME)

***Operational Level***

- Role 10 Visual Merchandiser (VM)
- Role 11 Sales & Operations Planner (SP)
- Role 12 Designer /Technologist (DT)
- Role 13 Junior Buyer /Procurement (JB)
- Role 14 Sales Associate (SA)
- Role 15 Freight Forwarding /Deliveries (FF)
- Role 16 Inventory Management (IM)

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3 2.2 Step 2. Establish activities (theoretical and practical) associated with the defined supply  
4 chain Job Roles – Applying Blooms Taxonomy  
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8 The next stage was to establish the activities for each identified Job Roles, noting their  
9 strategic, tactical, and operational components within an organisation. Notably, each activity  
10 was not exclusively associated with one job role. The relationships among job roles and  
11 activities were Many-to-Many, allowing overlap between roles and offering the necessary  
12 framework for expressiveness. Additionally, the descriptors for each activity needed to reflect  
13 the various levels for the different job roles. To achieve this requirement, we used Blooms  
14 Taxonomy to help identify activities, complexity, and specificity levels and then determine  
15 the necessary underpinning knowledge.  
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27 To conceptualise the knowledge structure in the targeted domain and a suitable data model  
28 for expressing job role definitions, scope and functions, a Class Diagram (CD) was used as a  
29 modelling tool. The Class Diagram is part of the Unified Modelling Language (UML) - a  
30 powerful modelling framework, which, through a set of highly expressive graphs, such as the  
31 CD, is widely used in capturing the structure and functional requirements of information  
32 systems, allowing to systematically proceed in their design (De Lope *et al.*, 2021). The  
33 modelling process captured the core concepts of Roles, Activities, and Knowledge elements.  
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44 A template and a corresponding information collection process were developed based on  
45 these concepts to standardise the process of establishing the activities. The tactical 'Buyer'  
46 job role was selected as a representative case, where there was a collective understanding of  
47 the role within the focus groups. At this stage, all groups worked together to identify the  
48 activities for the job role's three different strategic, tactical, and operational components.  
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55 The group of experts extracted the list of activities from the dataset of job adverts and  
56 interviews used in the previous stage. Applying Bloom's taxonomy, activities were organised  
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3 in a structured model considering their strategic, tactical, and operational components within  
4  
5 the job role, clarifying levels of complexity and specificity. Collectively working on the  
6  
7 Buyer job role, the focus group agreed on the different activities. The result of this stage was  
8  
9 a refined template and a verified process that was used as an exemplar to develop further the  
10  
11 list of activities in a standard form for all job roles.  
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15  
16 **Results:** The exemplar below shows the Buyer job role (Role 8) with the coded activities  
17  
18 configured to the strategic, tactical and operational levels. It shows the balance of more  
19  
20 significant requirements at the tactical level for this job role, with some activities at the  
21  
22 strategic and operational levels.  
23  
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26 ***Strategic Level***

27 S8.1 Evaluate External Trends

28 S8.2 Evaluate Future Collection

29 S8.3 Evaluate Vendors

30  
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32 ***Tactical Level***

33 T8.1 Implementation

34 T8.2 Budget

35 T8.3 Commercial / Financial Incoterms OTB

36 T8.4 Negotiate with Suppliers

37 T8.5 Sourcing Choice

38 T8.6 External Relationships

39 T8.7 Performance Analysis KPI – Exception Reporting – Dispute Resolution

40 T8.8 Product Development – Stakeholders

41 T8.9 Internal Relationships

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47 ***Operational level***

48 O8.1 Management Reporting

49 O8.2 Payment Sign-off – OTB

50 O8.3 Commitment – Supplier Payment

51 O8.4 Team Management

52 O8.5 Delegation & Responsibility

53 O8.6 Vendor Control & Performance Management  
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3 The research team was then divided into four groups, and the remaining 15 Job Roles were  
4 distributed between each group. The template was used as a guide to identify and code the  
5 relevant activities at the three levels. Each group continued to review and develop a pool of  
6 activities for their allocated Job roles using the data collected in the previous stage. The  
7 Buyer job role exemplar was used to ensure consistency and standardisation of the approach.  
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10 The results of individual groups' analysis were then consolidated into a common map of all  
11 the activities assigned to individual job roles, organised on three levels (strategic [S], tactical  
12 [T], and operational [O]). A unique coding using these three-level prefixes was applied to the  
13 final activity list. At this step, all minor mismatches or inconsistencies that occurred among  
14 the contributions of different groups regarding the naming and level positioning of activities  
15 (codes and sub-codes) were reviewed and resolved. A typical case was to detect activities  
16 with different but similar names. These were either merged if they were identified as the  
17 same or were differentiated by assigning different codes and names. Another case was to find  
18 the same activity at different levels. In such cases, it was ensured that different descriptors  
19 were used to reflect two distinct levels, e.g. operational and tactical. For example, we found  
20 the activity "Communicate with other functional teams" was assigned to the role of  
21 Merchandiser as operational [O9.1] while to the role of Junior Buyer as a tactical activity  
22 [T13.1]. The two occurrences were considered distinct activities requiring different level  
23 descriptors to avoid this ambiguity. They were then revised for the actual activities at the  
24 operational and tactical levels and were assigned different codes to be used for the two job  
25 roles.  
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51 Each group then reviewed another group's Job Role activities and provided feedback on  
52 potential concerns and proposed refinement. Following these discussions, an agreed-upon  
53 version of the activities for each Job Role was established.  
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**Result:** Example - The Operations / Supply Chain Management / Logistics Director is shown below:

***Strategic level***

- S3.1 Manage the supply chain from end to end internationally
- S3.2 Devise Logistics strategy
- S3.3 Devise Distribution strategy
- S3.4 Devise Operations Strategy
- S3.5 Ensure strategic alignment between operations and business strategy (location, capacity)
- S3.6 Devise Risk Management Strategy
- S3.7 Devise relationship strategy
- S3.8 Assess business environment (future)

***Tactical level***

- T3.1 Assess overall operational performance (KPIs) / Compliance- manage the Supply Chain
- T3.2 Ensure reporting to the Managing Director and business lines of the company
- T3.3 Manage Supplier and 3PL relationships
- T3.4 Manage Team and allocate tasks

***Operational level***

- O.1 Monitor real-time performance
- O.2 Manage escalated operational problems
- O3.1 Query IT system

A further review was undertaken with consultation with practitioners and students at undergraduate and postgraduate levels as proxies for potential entrants into full-time roles in the fashion sector. Some minor changes were made, and the final Job roles and their activities were confirmed.

*2.3 Step 3. Job Role Design: Configure the underpinning knowledge for Job Role activities.*

The first two steps decomposed job titles and their components. At this stage, the job roles were reconfigured, and each employee's identifiable characteristics were established. It by defining the knowledge requirements to fulfil and began by defining the knowledge

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2  
3 requirements for the Job Role activities established in Step 3. The Class Diagram approach  
4  
5 was again used to conceptualise a model for the definition, scope, and content of the job  
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7 roles, their activities, and knowledge requirements. The information collected from job  
8  
9 advertisements and interviews in Step 1 as also used to understand knowledge requirements  
10  
11 for each job role further.  
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15 The composition of the experts involved in this stage continued to reflect different countries  
16  
17 and cultures across the European fashion supply chain sector and included practitioner  
18  
19 competencies and academic knowledge expertise. Initially, the combined group of all the  
20  
21 experts reviewed the Buyer job role to create a preliminary exemplar.  
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24  
25 The Buyer Job Role was consistently used to create a template to configure the knowledge  
26  
27 elements and as a mechanism to standardise the process. A collective discussion among all  
28  
29 the experts using the Buyer job role as the exemplar created an initial list of knowledge  
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31 elements.  
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35 Including expert analysis of the job roles at this stage was essential in identifying the  
36  
37 universal job roles that covered a wide range of job titles and functions. To avoid bias, expert  
38  
39 groups were then divided into different structured focus groups to review the same four Job  
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41 Roles each, with a consequential increase in the pool of knowledge elements. The researchers  
42  
43 and any differences then compared the outcomes of the analysis from the focus groups were  
44  
45 identified. Coordination between the groups by a lead member ensured access and  
46  
47 transparency of the expanding knowledge pool. Each group reviewed the subsets of job roles  
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49 and developed an initial list of knowledge elements with appropriate descriptors for strategic,  
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51 tactical, and operational activities. The result was the creation of 88 different knowledge  
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53 terms.  
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3 Next, the initial review of the findings of the knowledge terms/elements from the four focus  
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5 groups resulted in the removal of duplicates or inconsistencies and adding localised terms to  
6  
7 reflect the whole European context in definition (e.g., added three specific country  
8  
9 knowledge terms for sourcing management, visual merchandising, and fashion to the list).  
10  
11 The result was refining the knowledge pool to 57 terms, including the additional localised  
12  
13 terms. An example of part of this list is shown in Appendix 1. Each group then revised the  
14  
15 activities within their subset of job roles using the pool of 57 knowledge terms to create the  
16  
17 initial combined version, which brought the activities and knowledge requirements of each  
18  
19 job role together. Then, another group of experts reviewed the initial version and provided  
20  
21 feedback with suggestions.  
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27 **Result:** An example of the feedback is shown in Figure 1 for job roles 2 (Buying Director), 8  
28  
29 (Buyer), 10 (Visual Merchandiser) and 16 (Inventory Management).  
30  
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32 Add Figure 1 here  
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35  
36 As a result of the review process, an understanding was developed that the same knowledge  
37  
38 could apply to different Strategic/Tactical/Operational level activities. Then, with descriptors  
39  
40 derived from Bloom's Taxonomy, the final version for each job role was established. An  
41  
42 example of knowledge terms that underpin the strategic activities relating to the Operations /  
43  
44 Supply Chain Management / Logistics Director job role is shown in Table 2.  
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47 Add Table 2 here  
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51 It was also noted that Job Roles, activities, and knowledge terms would undoubtedly change  
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53 with time and that a regular review process was considered an essential part of this closed-  
54  
55 loop methodological approach.  
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58 *2.4 Step 4. Identify the Job Role Knowledge Gaps.*  
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3 For each job role, the user's knowledge required to undertake the activity was identified by  
4  
5 using a structured two-stage multiple choice questionnaire approach. Each activity was  
6  
7 assessed using two rounds of questions. A list of questions was developed to assess the  
8  
9 existence of the knowledge requirements for each activity. If a question was answered  
10  
11 incorrectly, the user would be directed to a pool of resources designed to provide information  
12  
13 related to the specific knowledge. The user then attempted a second attempt at a different  
14  
15 version of the same question, resulting in two probable outcomes. If they answered correctly,  
16  
17 it indicated they had gained the knowledge necessary to understand the activity. If they failed  
18  
19 to answer correctly, the knowledge gap was recorded.  
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24 **Results:** As the user progressed through the assessment of knowledge for each activity, the  
25  
26 knowledge gaps for all the activities relating to the Job Role were established. This outcome  
27  
28 determined the training needs created at the individual level, aggregated by all individuals in  
29  
30 an organisation, and more broadly across the sector.  
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### 33 34 *2.5 Step 5. An Action Plan for Individual/Organisational/Sectoral Training Requirements* 35 36 *Toward Job Role Visibility* 37 38

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40 This step contributed to understanding training needs as an essential requirement for  
41  
42 developing the knowledge structure of the organisation, which is further considered a  
43  
44 dynamic activity that constantly changes over time (Dobroszek, 2020). At the recruitment  
45  
46 stage, it assists individuals in search of employment in a sector to clearly understand what  
47  
48 activities and knowledge are required for each job role and their suitability for the role, and at  
49  
50 the development stage, in managing their career aspirations and expectations (Flöthmann *et*  
51  
52 *al.*, 2018). Where there was a gap between knowledge requirements and skills and  
53  
54 competencies required in a job role, the necessary action plans for training needs were  
55  
56 established at the individual and then at the organisational or sector-related level.  
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**Result:** The findings indicated a fluid training base, recognising that similar training could be required for different job roles. In addition, sharing knowledge was found an important process within an organisation or a sector toward transparency, understanding different job roles, and offering efficient and relevant training. Hence, including different perspectives and contexts from within the organisation for similar knowledge requirements has been found significant (Kotzab *et al.*, 2018). The consistency of knowledge was found effective in empowering a similar language and communication across the job roles and a standardised framing of the defined knowledge architecture within the organisation, which would be of particular interest to the HR function. A summary of the two stages with the five-step methodology is shown in Figure 2, which demonstrates the process through which each step contributes to job role visibility.

Add Figure 2 here

## 6. Discussions and conclusions

This research contributes to the theory development of job role clarity as part of supply chain visibility. Existing efforts in synthesising tasks and knowledge ontologies with the required tasks for the specific type of occupation, such as nursing, have been shown to benefit career guidance and assessing the qualifications of job applicants and job holders (Khobreh *et al.*, 2016). However, these efforts have not addressed specific job roles, their associated theoretical and practical activities, or the underpinning knowledge requirements, which recruiters and job owners desire. This paper developed a methodological framework to enable an evolving formulation of job roles with their specific components (including knowledge and activities), recognising the constantly changing nature and needs of the current markets and specific industries (Boudreau *et al.*, 2003).

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2  
3 In identifying the core skills and knowledge requirements, consistent with Brusset (2016),  
4  
5 this research found the relevance of knowledge and activities of actors related to their job  
6  
7 roles across a supply chain as a driving force to information capability and competency  
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9 needs. This resulted in clarity of each job role, overcoming an existing barrier in supply chain  
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11 visibility (Kalaiarasan *et al.*, 2022).  
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15  
16 By providing a methodology to develop job role requirements, this paper contributed to  
17  
18 framing knowledge, activity requirements, and training needs. This results in developing an  
19  
20 intellectual architecture of strategic, tactical, and operational roles with a balance of relevant  
21  
22 level descriptors. Consistent with the findings of Liboni *et al.* (2019), it is recommended that  
23  
24 SCM managers and departments work closely with HR departments to understand the  
25  
26 primary skills, knowledge gaps and training requirements.  
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30  
31 It also recognises the global challenges of supply chain visibility and the need for consistency  
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33 across supply chains, with the need to apply the method at an individual, organisational, and  
34  
35 sectoral level for job role clarity.  
36  
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40 At an individual level, the proposed methodology will aid personal knowledge development  
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42 for each job role and help guide and develop career aspirations for lifelong learning. It will  
43  
44 inform the educational needs of the individual to fulfil the job role requirements and support  
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46 wellbeing of the individual. Further, this approach will benefit the person undertaking the job  
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48 role by clarifying the requirements to achieve the defined objectives, leading to personal  
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50 satisfaction, similar to the findings of Birou and Van Hoek (2022).  
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54 At an organisational level, the developed methodology provided transparency and clarity for  
55  
56 each job role's specification and boundaries, enabling the development of an effective  
57  
58 organisational structure. This visibility in job roles creates value for the HR function by  
59  
60 drawing clear lines of responsibility, accountability, and personal development for each role

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3 that promotes an organisation focussed on effective customer service (Liboni *et al.*, 2019).

4  
5 Further, this methodology makes internal grading for remuneration much simpler, as it is a  
6  
7 transparent process that allows for a consistent and open assessment for an equitable  
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9 determination of outputs with a need to offer training and  
10  
11 economic incentives at all hierarchical levels, consistent with the findings of Vivares-Vergara  
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13 *et al.*, (2016). This is responds to Birou and Van Hoek (2022), who argued against ignoring  
14  
15 the need to link talent development with success, recognition of talent, promotion, and pay  
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17 impact. We have shown the benefits derived from a transparent job role methodology, which  
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19 establishes resources with skills and knowledge according to the job roles using a universal  
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21 language in different markets.  
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26  
27 At the sectoral level, developing sixteen job roles across the whole fashion supply chain  
28  
29 allowed visibility from the first-level supplier to the final retailer and the service roles that  
30  
31 supported those job roles along the supply chain. The visibility of each job role within a  
32  
33 supply chain contributes to the desired consistency of information flow (Barratt and Barratt,  
34  
35 2011). This contribution enables consistency of terminology across a supply chain, which can  
36  
37 remove the potential mismatch of knowledge and activities in each job role and lead to a  
38  
39 collective understanding of training requirements for each job role across the supply chain  
40  
41 (Kalaiarasan, *et. al.*, 2022). Further, it has the potential to enable consistency of remuneration  
42  
43 across and between supply chains with similarity of salary scales matching their knowledge  
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45 and skills requirements. The developed methodology will aid the removal of barriers to  
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47 global talent management capabilities, which are often seen as difficult and complex across  
48  
49 national and international supply chains (Schuler *et al.*, 2011). Table 3 below summarises the  
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51 contribution and impact of the main research results.  
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57 Add Table 3 here  
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## 7. Limitations and Future Research

Although the methodology included an extensive approach to data collection, there is a need to develop the systematic approach adopted in this research further. This could include a statistical approach to understanding the weighting of the dimensions followed in the developed steps of the methodology for job role architecture and talent development. We have attempted to provide an in-depth approach to our analysis, but a causal analysis could provide further insight into the developed methodology. The advent of virtual reality and artificial intelligence in fashion supply chain management could also provide an opportunity to develop the methodological approach further, as future visibility and sourcing considerations will undoubtedly include these dimensions.

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## Job role clarity: A missing component of supply chain visibility Figures

**Feedback on activities and knowledge**

For each activity we need to consider the knowledge split for each job role around appropriate levels and then add knowledge requirements for the missing activities.

**Group 1 Job Roles**

The activities are clearly presented for each job role but there is some concern about links to strategic activities and the use of the descriptor 'understanding' for knowledge rather than the knowledge of 'implementation'. The Buying Director has no operational activities or knowledge which needs some discussion.

Role No	Job Role	Activities	Knowledge
2	Buying Director	S2.1/2	1 Need to include communication plan in strategy development (K8) 2 Need to refer to strategy for maintaining relationship (with supplier) (K9/K15) See DIT Role 3 S3.7
		S2.5	1. Define the objectives of the team (Board) (K88) and ability to persuade
		T2.1	1 There is a Commercial knowledge requirement (not in list) that should be part of budgeting (Tactical)
8	Buyer Much of this was done at the last partner meeting.	Operational activities Seems fine	1. Why no Operational knowledge?
10	Visual Merchandiser	S10.2	1. Need to have strategic knowledge of category/ collections / product development underpinning T10.4
		S10.4/5	1. Need to include link to store format planning and stock allocation of space. Possible Tactical activity?
16	Inventory Management	S8.1	1. Need to include S&OP as a strategic knowledge. Executing S&OP is a Tactical activity (T16.2)
		General comment	There is the use of the descriptor 'understanding' in the Tactical section whereas the knowledge is about executing each activity

Figure 1: An Example of the Review Process in Development of Job Role Visibility Model

Job role clarity: A missing component of supply chain visibility  
 Figures

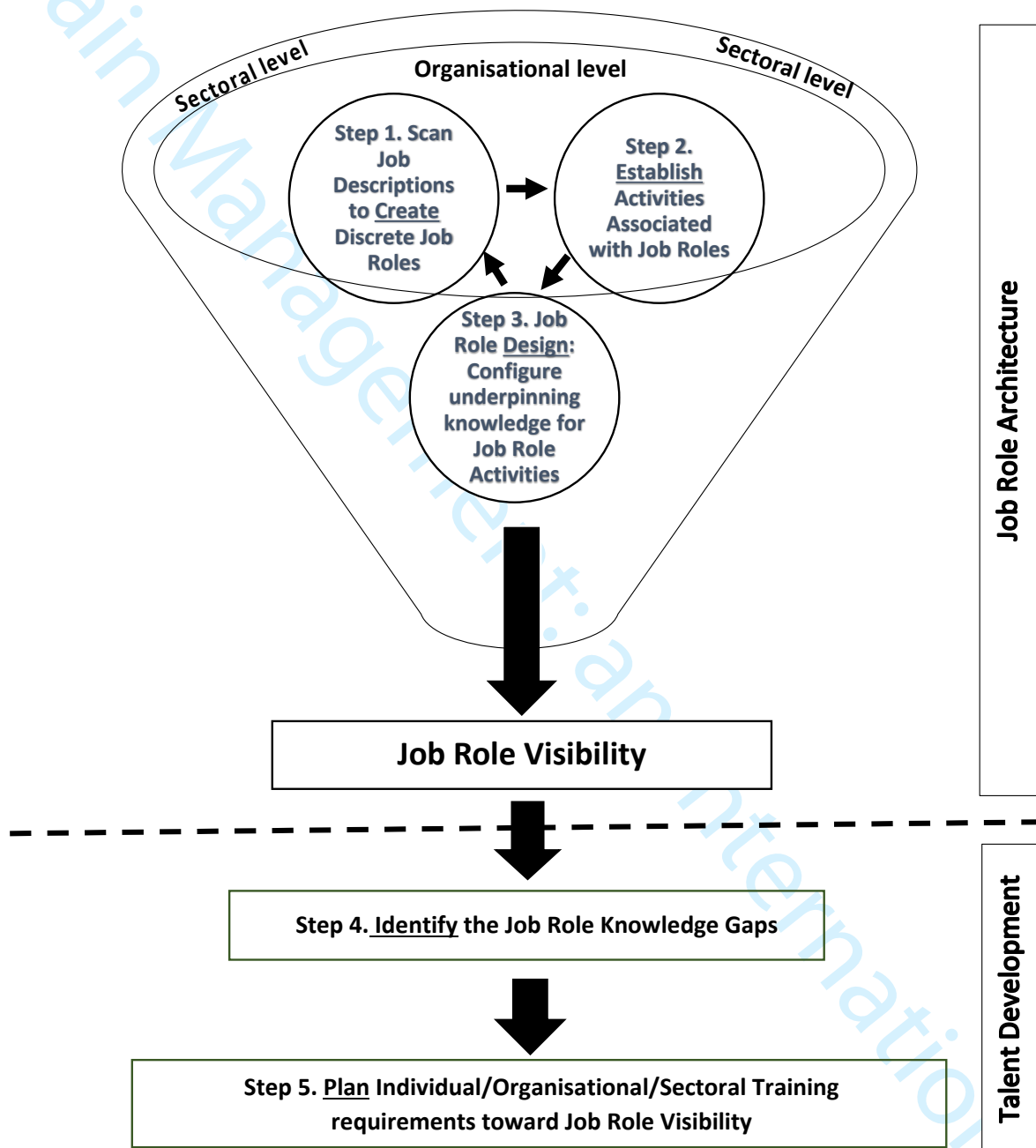


Figure 2: Job Role Requirement 5 Step Summary Across a Supply Chain

## Job role clarity: A missing component of supply chain visibility

### Tables

JOB DESCRIPTION	EXAMPLE JOB TITLES	SUMMARY OF CORE FUNCTION CONTENT	Impact on Academia and Business
<b>MANAGING DIRECTOR</b>	<ul style="list-style-type: none"> <li>• Global Wholesale Manager</li> <li>• Managing Director</li> </ul>	<ul style="list-style-type: none"> <li>• Customer account management</li> <li>• Financial performance management</li> <li>• Public relations and market positioning</li> <li>• Sales management (planning, campaign, review)</li> <li>• Wholesale/ retail strategy (planning, management and review)</li> </ul>	<ul style="list-style-type: none"> <li>• Identifies the application of key core functions at a strategic level in the organisation for framing the job role.</li> <li>• Determines the basis for the high-level descriptors in this senior job role for managing and directing their leadership team</li> </ul>
<b>PRODUCT DEVELOPER ROLES</b>	<ul style="list-style-type: none"> <li>• Junior Product Manager, Larsson &amp; Jennings</li> <li>• Junior Product Manager-Accessories</li> <li>• Product Developer</li> <li>• Product Developer - Jersey (MW &amp; WW)</li> <li>• Product Developer (Sportswear)</li> <li>• Product Developer/Designer</li> <li>• Senior Product Developer-Team Sports</li> </ul>	<ul style="list-style-type: none"> <li>• Brand management</li> <li>• Collaboration across teams (retailer, distribution and supplier)</li> <li>• Compliance and quality assurance</li> <li>• Design management</li> <li>• Financial performance management</li> <li>• Market research (competitor, product, pricing)</li> <li>• Product development and management (retail and supplier collaboration)</li> <li>• Product management (retail and supplier)</li> <li>• Sales management (planning, campaign, review)</li> <li>• Time management</li> <li>• Travel (UK, Far East)</li> </ul>	<ul style="list-style-type: none"> <li>• Highlighted a wide variety of job titles for the Product Developer role that can lead to confusion over job role definition.</li> <li>• Identified a large number of core functions that require careful consideration in designing relevant content, some of which are tactical and some are operational tasks</li> <li>• It would be important to clarify the boundary of other closely related job roles to ensure clarity and focus and to avoid unnecessary confusion in the organisational structure.</li> </ul>

Table 1: Managing Director and Product Developer Job Titles and their Core Functions

## Job role clarity: A missing component of supply chain visibility Tables

<b>OPERATIONS / SCM/ LOGISTICS DIRECTOR</b>										
Job Role 3	<b>Knowledge</b>									
Strategic	<i>ACTIVITIES</i>	1	2	3	4	5	6	7	8	9
S3.	Manage the supply chain from end-to-end internationally	K2. KPIs	K48. Supply chain management	K8. Strategy formulation process	K24. Risk assessment	K33. Reporting (written & verbal)	K37. Team building, trust & performance	K38. Analytical skills & problem solving	K50. Demand management	K28. Market assessment tools
S3.2	Devise logistics strategy	K1. Performance evaluation	K8. Strategy Formulation process	K42. Logistics management	K39. New Technology adoption	K23. New product development	K35. Cross-disciplinary decision making			
S3.3	Devise distribution strategy	K1. Performance evaluation	K8. Strategy formulation process	K40. Distribution & storage management	K39. New technology adoption	K35. Cross-disciplinary decision making	K25. Inventory management			
S3.4	Devise Operations Strategy	K1. Performance Evaluation	K8. Strategy formulation process	K45. Manufacturing and Operations Management	K39. New technology adoption	K35. Cross-disciplinary decision making	K25. Inventory management			
S3.5	Ensure strategic alignment between operations and business strategy (location, capacity)	K35. Cross-disciplinary decision making	K1. Performance evaluation	K37. Team building, trust & performance	K38. Analytical skills & problem solving	K1. Performance evaluation				
S3.6	Devise Risk Management Strategy	K24. Risk assessment	K32. Administration processes	K47. Regulatory compliance	K43. Standard Operating Procedures	K11. Developing a communication plan	K52. How to maintain relationship with other functions			
S3.7	Devise relationship strategy	K48. Supply chain management	K12. Stages of interaction with the supplier (phases)	K13. Assessing importance of information	K8. Strategy formulation process	K35. Cross-disciplinary decision making	K55. Sourcing management			

### Job role clarity: A missing component of supply chain visibility

#### Tables

				sharing with supplier; IT evaluation						
S3.8	Assess business environment (future)	K28. Market assessment tools	K39. New Technology adoption	K24. Risk assessment	K23. New product development	K38. Analytical skills & problem solving				

*Table 2: An example of Knowledge Terms Underpinning the Strategic Activities Relating to the Operations / Supply Chain Management / Logistics Director Job Role*

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## Job role clarity: A missing component of supply chain visibility

## Tables

Source of Contribution	Advert	Expert views	Research Finding	Impact
Gap between the experts' knowledge of the job roles and disparities in job adverts and their requirements	Varying requirements in job advert descriptions	Experts' knowledge of the job roles varies considerably without a reference framework	Detailed coding of the data, followed by analysis applying Bloom's taxonomy to create a standardised job role	Determine a standardised common understanding for job roles across a supply chain
Changing the focus from job titles to job roles	Job titles	Inconsistent knowledge, skills and competencies (KSA) for the same job title	Create Job roles with consistent KSA with associated level descriptors	Expert analysis confirmed that the established universal job roles covered a wide range of job titles and functions
Job role visibility and effective talent management.	Adverts focus on job titles in the organisation	Expert views inconsistencies in job title content across different organisations	A changing focus from job titles to job roles as a content-based representation of each role	Enables job role visibility and effective talent management within and across supply chains
Job Roles grouped by strategic, tactical, and operational levels	Inconsistent use of level descriptors for similar job titles	Unclear position within a typical organisational structure	Develop a hierarchical framework for determining operational, tactical and strategic roles	Includes levels of knowledge, comprehension, application, analysis, synthesis, and evaluation (Athanassiou et al., 2003)
Mismatches or inconsistencies with the naming and level positioning of activities (codes and sub-codes)	Detected different activities but with similar job titles	Inconsistent naming and level positioning of activities	Create consistency within the new framework in Figure 2	Refer to the new framework in Figure 2
Consistency of terminology across a supply chain	Interchangeability of terms and titles in job titles with the same meaning leads to confusion in their interpretation	Potential mismatch of knowledge and activities in each job role	Consistency in applying the same job role in each part of the supply chain to create a common understanding, irrespective of location, culture or nationality	Use of developed template creates a collective understanding of training requirements for the same job role across and between supply chains
Multi-method approach	Archival research (of job adverts)	Expert interviews to frame particular job roles	Identified the gap between the experts' knowledge of the job roles and disparities in job adverts and their requirements	Resulting two part (Job Role Architecture and Talent Development), five steps method applicable to different contexts and situations across a supply chain. Regular

## Job role clarity: A missing component of supply chain visibility

## Tables

				reviews are required to capture changes and future developments
Identification of gap in job role KSA	Individual lack of knowledge	Assessment against knowledge requirements, skills and competencies required in a job role	Determined talent development training needs	For the individual, aggregated at the organisational and sector-related level

Table 3: A Summary of the Contribution and Impact of the Main Research Results