Job role clarity: a missing component of supply chain visibility

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Abstract

Purpose – This 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 five-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.

Keywords Supply chain management, Human resource practices, Fashion retailing, Knowledge acquisition, SCM competency, Skills

Paper type Research paper

1. 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, organisations 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

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job roles across the supply chain, aiming for enhanced supply chain visibility (SCV).

Sections 2 review the literature on role ambiguity and its impact on SCV, 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. Section 3 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 discussion of the results and conclusions in Section 5, and then limitations of the research and directions for future research in Section 6.

2. Literature review

SCV has focused on information sharing for a higher level of visibility as part of supplier management that enhances close relationships between the production and supporting functions within an organisation (Barratt and Barratt, 2011) and across organisational boundaries between the firm and its suppliers and customers (Kalaiarasan *et al.*, 2022). The supply and demand of quality information heavily depend on the various" players involved in the supply chain" (Somapa *et al.*, 2018, p. 308), the quality of their performance (Kalaiarasan *et al.*, 2022), and the "quality" of information shared in a sustainable collaboration (Brun *et al.*, 2020). For instance, Barratt and Barratt (2011) found that despite the positive impact of shared information on operational improvements, it did not contribute to high visibility. This pointed to participants' relevant knowledge and activities across a supply chain to fulfil their job roles, addressing information capability and competency needs (Brusset, 2016) and contributing to visibility within the supply chain (Barratt and Oke, 2007).

Despite the overall objective, SCV fails to consider the consistency of language within the supply chain labour market and development of a universal core set of knowledge requirements, skillsets and activities related to each job role across the sector. There are a few studies with a focus on purchasing (e.g., Ellram *et al.*, 2020; Johnson *et al.*, 1998; Meier *et al.*, 1998) or graduates' recruitment in the supply chain, but they do not extend to the whole supply chain labour market. For instance, Jordan and Bak (2016) identify a list of key graduate skills needs but do not consider the constantly evolving nature of the supply chains. Dobroszek (2020) extended their study to the impact of ambiguity in occupational profiles and concluded that sustainable supply chains could not exist without effective and transparent detailed profiles and performance measurements for supporting visibility in supply chain management. The findings of these studies indicate job role ambiguity across the international labour market, causing further disruption during the recruitment and talent development process and impacting product supply, delivery and financial exchange (Caridi *et al.*, 2014).

As a broader issue beyond visibility in the supply chain, the intersection between Human Resource Management (HRM) and Operations Management as independent focus areas has rarely been explored (Boudreau *et al.*, 2003), the former perceived to be led by HR and the latter by line managers. The studies that explore the interface between the two are commonly motivated by requirements of competitive advantage and competitive priorities, hence exploring how the two can enhance each other (e.g. Vivares-Vergara *et al.*, 2016). In their paper, Jackson *et al.* (2014) propose using systems thinking in strategic HRM to address the concerns of multiple stakeholders and provide greater relevance to the world of work. Schuler *et al.* (2011, p. 506) bring the various aspects of the debate together through "global talent challenges" including "talent shortages, talent surpluses, locating and relocating talent and compensation levels of talent" and a need for effective global talent management to enable sustainable competitive advantage.

This leads to the paper's aim, which is to address this gap by developing a methodological approach to determining job roles as a content-based representation of each role that enables job role visibility and effective talent management. The European supply chain has been chosen as a case study due to its integrated links while maintaining the independence of country-specific requirements, demographics, and limitations.

This leads to the research question:

RQ1. How can job role clarity inform talent management needs across occupational titles supporting SCV?

2.1 Role ambiguity as a barrier to supply chain visibility

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 (Orgambídez 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 satisfaction. This paper introduces a methodology to navigate and balance the two topics, considering national and organisational contexts, job role architecture and talent management focusing on supply chain management.

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

2.2 Fashion sector role ambiguity

The fashion sector is characterised by a vastly globalised manufacturing supply chain using 3.45 billion employees and a global revenue estimated at approximately $2.0tn (FashionUnited.com, 2021). It is an international fast-changing and dynamic environment with unpredictable customer requirements that constantly require updating and revising talent skills and competencies (Boström and Micheletti, 2016). These attributes are also observed in agile supply chains from other sectors, such as automotive, technology and food, where visibility has become an essential dimension of extended sourcing requirements (Bruce *et al.*, 2004).

The range of job titles in the fashion sector can vary significantly between and within organisations depending on organisational structures, positions, and location-based factors (Rana and Zhao, 2018). Further, technology advancements and new information systems have resulted in the introduction of new roles and functions into the fashion labour market, more dynamic job role requirements (Rossetti and Dooley, 2010), and the development of vertical information systems to enable cross-functional teams' operations especially when developing new products (Ellram *et al.*, 2020). These factors, while contributing to workers' occupational identities (Waliśnka and Dobroszek, 2021), add further confusion and disorientation in the labour market. Employees within the fashion industry identify a need to develop self-efficacy through a clear understanding of their career options based on their skills, knowledge and experiences (Frazier and Cheek, 2005).

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

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

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

As a result, we identify "job role visibility" as a missing dimension of SCV caused by a lack of a dynamic methodology and a fitting platform. We highlight a need for a standard platform for clarity of job role requirements that is responsive and evolving following the local, national and international market requirements and enables talent development. The review of existing methodologies and platforms in the next section indicates the progress to date and clarifies the methodological gap.

2.3 Existing job role platforms and the methodological gap

With the purpose of role clarity, digital platforms for job seeking, HRM and training (Brunello and Wruuck, 2021) have contributed to an initial step in standardisation of terminology, consistency and semantic clarity of job roles. An effort for standardising job descriptions started several decades ago with international classifications such as the "Standard Classification of Occupations" (ISCO, 2010) of the International Labour Organisation (ILO). Such classifications initially contributed to statistical studies, forecasts and policy formulation; however, they lacked a focus on aspects of job requirements. In another attempt, the European Parliament (European Communities, 2007) identified critical competencies for career and lifelong learning. These requirements provided a valuable basis for consistency across the range of job roles in a supply chain. However, they did not connect to specific roles or industries; hence, there is a need for a more detailed platform for role requirements and characteristics. The "European Skills, Competences, Qualifications and Occupations" (ESCO) (European Commission, 2022) and the Occupational Information Network (O*NET) (National Center for O*NET Development, 2023) are the most notable internationally influential job-related standardisations in digital form, which attempted to close the gap between the classification of occupations and their related competencies. They organised occupations in hierarchies with both essential or optional skills/knowledge elements and qualifications and provided links informing which occupations were related to which set of competencies. The ESCO classification contains 3,000 occupations and 13,000 skills and competencies, available in 27 languages, and hence has been used by multiple projects and researchers in relation to problems such as skill matching and education development (Brunello and Wruuck, 2021).

However, we argue that the assignment of skills to occupations, i.e. to job titles, is not expressive enough and consequently not efficient, at least for describing job positions in specialised areas such as the fashion industry, nor for defining knowledge requirements associated with highly focused aspects, such as SCV. For instance, Mirski *et al.* (2017) incorporated ESCO classification in the openSKIMR project

(Open European Skill Match Maker, 2019) to build a tool, an automated matching system between applicants' skill sets and a specific job's required skill sets. OpenSKIMR, however, solely relied on the existing ESCO job description model, which did not reflect some highly evolving and challenging areas, such as SCV. Consequently, Chiarello *et al.* (2021) point to a need for essential updates to ESCO classifications, considering the rapid technological changes, including Industry 4.0.

Ontology-based approaches in digital form are among the typical tools to organise and describe job roles and the associated tasks, skills and knowledge, as well as to match job titles with qualifications and education needs (Khobreh *et al.*, 2016). They aimed to allow advanced computerised matching based on semantics rather than keywords and adapted the generic NeOn ontology development methodology to an ontology-based framework. It created a semantic representation of "that which is taught in VET" (Vocational Education and Training), "that which is required on the job" and "how the two are related". They defined jobs as lists of tasks, which are themselves tasks as clusters of activities or sequences of related activities directed at specified objectives. They used the concepts of "Task, Competence and KSA (Knowledge/Skill/Ability)" and applied the framework to specific occupation types, such as nursing. However, they did not consider specific characteristics of job roles, their associated theoretical and practical activities, nor the underpinning knowledge requirements.

While the flagship projects of ESCO and O*Net are based on the work of expert groups, another approach to specification of framing standards is data-driven. Considerable research is performed in automatic knowledge extraction from data, using text mining and other machine-learning methods (Rentzsch and Staneva, 2020). As a representative case of the data-driven methodology, Cloud Talent Solution developed by Google is used inside the job search feature of the Google search engine (Posse, 2016). They aimed to link the O*Net ontology with their proprietary ontology by extracting occupation descriptions and skills from millions of job postings found on many company websites. The methods included a phase of job advertisement title standardisation and classification, and finally, they were organised into a job ontology. It resulted in 30 broad job categories with 1,100 occupation families, 250,000 specific occupations, and skills, detected in job seeker queries and mapped in a skill ontology. Machine-learning methods then interlinked skills and standardised job titles. Despite its solid bases, it does not reflect circumstances where the standard classifications do not apply or emerging sectors and occupations are involved (Rihova, 2016), such as the case of the fashion industry. Further, supply chain planners and analysts' selection is often driven by an interviewer's subjective criteria, distorted by job title definition subjectivity and the personal preferences of hiring managers (Flöthmann *et al.*, 2018).

Hence, despite the essential related efforts, the envisaged consistency and standardisation in job role description have not yet been achieved across different countries and cultures, leaving room for further development towards a reliable basis for information exchange. This paper aims to address this gap by changing the focus from job titles to job roles as a content-based representation of each role, bringing jobs with similar characteristics under the umbrella of a "job role".

3. Methodology

This section discusses the methods we used 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 used 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 used 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 follows:

- knowledge and comprehension;
- application; and
- analysis, synthesis and evaluation.

To identify job role characteristics, we call the above categories:

- knowledge (including knowledge and comprehension);
- skills (as the application of knowledge and comprehension); and
- 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, using 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.

4. Analysis and findings

The following describes the two-stage approach (Job Role Architecture and Talent Development) we used 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.

4.1 Step 1. Scan information sources of job descriptions to create discrete job roles across the supply chain – using 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 job title. Two sets of data were collected to explore the job titles and descriptions:

1 recruitment advertisements and documents; and
2 interviews with relevant key stakeholders responsible for recruitment and selection of staff or those seeking employment in the fashion sector.

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

A team of academic experts collected and analysed data from recognised professional periodicals (e.g. Retail Weekly, Retail Gazette) and newspapers. These newspapers included regular job adverts for the fashion sector, online job recruitment websites (e.g. fashionjobs.com) and recruitment agencies that specialised in staff recruitment across Europe's fashion supply chain. To limit the scope of the research to a manageable scale, this study focused on the UK, Ireland, Italy and France with members of the research team from these four countries. The countries are within the top ten listings for global apparel demand and significant fashion sectors, including retail, manufacturing and sourcing expertise and competencies, with related networks across Europe. The investigation included a content analysis (Harwood and Garry, 2003) of the core responsibilities and functions detailed in the job specifications across the fashion supply chain. We excluded job titles that were not full-time, irrelevant to the fashion industry, or only related to a lifestyle business where homeworking was a significant part of the job specification. This helped to provide a more precise definition and framing of the content analysis and enhanced the coding and refining of the collected data. For example, in the UK job market, 1,897 job adverts for different fashion supply chain job titles were reviewed, and the core job functions based on the job descriptions were extracted. In our analysis, job titles refer to the advertisements that list activities associated with each function. The example in Table 1 is a screenshot from the resulting analysis for the job titles related to Managing Director and Product Developer.

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

Analysis of the data collected from the two primary sources involved applying the "strategic, tactical and operational" filters (Schmidt and Wilhelm, 2000). It resulted in a comprehensive list of all the Job Titles with descriptions of their associated activities. It also identified gaps in the stakeholders' perceptions and identifications of "job roles" and the variety of job adverts connected to the job descriptions. This list contained some significant anomalies, such as similar job functions involved with the same activities but for different job titles. Moreover, listed activities displayed inconsistency for similar job titles at the same level and a misalignment of strategic, tactical and operational descriptors between various levels of activities. Hence, we used the phrase "job role" to refer to a universal framing of job titles with various requirements and characteristics that point to a typical job function.

Based on these findings from the range of job titles, a thematic analysis was undertaken to identify which discrete job roles best described the core job functions identified in the different job titles. The analysis identified a set of discrete job roles across the fashion 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 16 job roles. They are as follows:

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)

Table 1 Managing director and product developer job titles and their core functions

Job description	Example job titles	Summary of core function content	Impact on academia and business
Managing director	• Global wholesale manager • Managing director	• Customer account management • Financial performance management • Public relations and market positioning • Sales management (planning, campaign, review) • Wholesale/ retail strategy (planning, management and review)	• Identifies the application of key core functions at a strategic level in the organisation for framing the job role • Determines the basis for the high-level descriptors in this senior job role for managing and directing their leadership team
Product developer roles	• Junior Product Manager, Larsson & Jennings • Junior Product Manager-Accessories • Product Developer • Product Developer – Jersey (MW & WW) • Product Developer (Sportswear) • Product Developer/Designer • Senior Product Developer-Team sports	• Brand management • Collaboration across teams (retailer, distribution and supplier) • Compliance and quality assurance • Design management • Financial performance management • Market research (competitor, product, pricing) • Product development and management (retail and supplier collaboration) • Product management (retail and supplier) • Sales management (planning, campaign, review) • Time management • Travel (UK, far east)	• Highlighted a wide variety of job titles for the product developer role that can lead to confusion over job role definition • 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 • 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

Source(s): Authors' own work

4.2 Step 2. Establish activities (theoretical and practical) associated with the defined supply chain job roles – applying Blooms Taxonomy

The next stage was to establish the activities for each identified job roles, noting their strategic, tactical and operational components within an organisation. Notably, each activity was not exclusively associated with one job role. The relationships among job roles and activities were Many-to-Many, allowing overlap between roles and offering the necessary framework for expressiveness. Additionally, the descriptors for each activity needed to reflect the various levels for the different job roles. To achieve this requirement, we used Blooms Taxonomy to help identify activities, complexity and specificity levels and then determine the necessary underpinning knowledge.

To conceptualise the knowledge structure in the targeted domain and a suitable data model for expressing job role definitions, scope and functions, a Class Diagram (CD) was used as a modelling tool. The Class Diagram is part of the Unified Modelling Language (UML) – a powerful modelling framework, which, through a set of highly expressive graphs, such as the CD, is widely used in capturing the structure and functional requirements of information systems, allowing to systematically proceed in their design (De Lope *et al.*, 2021). The modelling process captured the core concepts of roles, activities and knowledge elements.

A template and a corresponding information collection process were developed based on these concepts to standardise the process of establishing the activities. The tactical "Buyer" job role was selected as a representative case, where there was a collective understanding of the role within the focus groups. At this stage, all groups worked together to identify the activities for the job role's three different strategic, tactical and operational components.

The group of experts extracted the list of activities from the data set of job adverts and interviews used in the previous stage. Applying Bloom's taxonomy, activities were organised in a structured model considering their strategic, tactical and operational components within the job role, clarifying levels of complexity and specificity. Collectively working on the buyer job role, the focus group agreed on the different activities. The result of this stage was a refined template and a verified process that was used as an exemplar to develop further the list of activities in a standard form for all job roles.

Results: The exemplar below shows the Buyer job role (Role 8) with the coded activities configured to the strategic, tactical and operational levels. It shows the balance of more significant requirements at the tactical level for this job role, with some activities at the strategic and operational levels.

Strategic level:
S8.1 Evaluate External Trends.
S8.2 Evaluate Future Collection.
S8.3 Evaluate Vendors.
Tactical level:
T8.1 Implementation.
T8.2 Budget.
T8.3 Commercial/Financial Incoterms OTB.
T8.4 Negotiate with Suppliers.
T8.5 Sourcing Choice.
T8.6 External Relationships.
T8.7 Performance Analysis KPI – Exception Reporting – Dispute Resolution
T8.8 Product Development – Stakeholders
T8.9 Internal Relationships
Operational level:
O8.1 Management Reporting.
O8.2 Payment Sign-off – OTB.
O8.3 Commitment – Supplier Payment.
O8.4 Team Management.
O8.5 Delegation & Responsibility.
O8.6 Vendor Control & Performance Management.

The research team was then divided into four groups, and the remaining 15 job roles were distributed between each group. The template was used as a guide to identify and code the relevant activities at the three levels. Each group continued to review and develop a pool of activities for their allocated Job roles using the data collected in the previous stage. The buyer job role exemplar was used to ensure consistency and standardisation of the approach.

The results of individual groups' analysis were then consolidated into a common map of all the activities assigned to individual job roles, organised on three levels (strategic [S], tactical [T] and operational [O]). A unique coding using these three-level prefixes was applied to the final activity list. At this step, all minor mismatches or inconsistencies that occurred among the contributions of different groups regarding the naming and level positioning of activities (codes and sub-codes) were reviewed and resolved. A typical case was to detect activities with different but similar names. These were either merged if they were identified as the same or were differentiated by assigning different codes and names. Another case was to find the same activity at different levels. In such cases, it was ensured that different descriptors were used to reflect two distinct levels, e.g. operational and tactical. For example, we found the activity "Communicate with other functional teams" was assigned to the role of Merchandiser as operational [O9.1] while to the role of Junior Buyer as a tactical activity [T13.1]. The two occurrences were considered distinct activities requiring different level descriptors to avoid this ambiguity. They were then revised for the actual activities at the operational and tactical levels and were assigned different codes to be used for the two job roles.

Each group then reviewed another group's job role activities and provided feedback on potential concerns and proposed refinement. Following these discussions, an agreed-upon version of the activities for each job role was established.

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.

4.3 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 requirements for the job role activities established in Step 3. The Class Diagram approach was again used to conceptualise a model for the definition, scope and content of the job roles, their activities and knowledge requirements. The information collected from job advertisements and interviews in Step 1 as also used to understand knowledge requirements for each job role further.

The composition of the experts involved in this stage continued to reflect different countries and cultures across the European fashion supply chain sector and included practitioner competencies and academic knowledge expertise. Initially, the combined group of all the experts reviewed the Buyer job role to create a preliminary exemplar.

The buyer job role was consistently used to create a template to configure the knowledge elements and as a mechanism to standardise the process. A collective discussion among all the experts using the Buyer job role as the exemplar created an initial list of knowledge elements.

Including expert analysis of the job roles at this stage was essential in identifying the universal job roles that covered a wide range of job titles and functions. To avoid bias, expert groups were then divided into different structured focus groups to review the same four job roles each, with a consequential increase in the pool of knowledge elements. The researchers and any differences then compared the outcomes of the analysis from the focus groups were identified. Coordination between the groups by a lead member ensured access and transparency of the expanding knowledge pool. Each group reviewed the subsets of job roles and developed an initial list of knowledge elements with appropriate descriptors for strategic, tactical and operational activities. The result was the creation of 88 different knowledge terms.

Next, the initial review of the findings of the knowledge terms/elements from the four focus groups resulted in the removal of duplicates or inconsistencies and adding localised terms to reflect the whole European context in definition (e.g. added three specific country knowledge terms for sourcing management, visual merchandising and fashion to the list). The result was refining the knowledge pool to 57 terms, including the additional localised terms. An example of part of this list is shown in Appendix. Each group then revised the activities within their subset of job roles using the pool of 57 knowledge terms to create the initial combined version, which brought the activities and knowledge requirements of each job role together. Then, another group of experts reviewed the initial version and provided feedback with suggestions.

Result: An example of the feedback is shown in Figure 1 for job roles 2 (Buying Director), 8 (Buyer), 10 (Visual Merchandiser) and 16 (Inventory Management).

Figure 1 An example of the review process in development of job role visibility model

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)
		Operational activities	1. Why no Operational knowledge?
8	Buyer Much of this was done at the last partner meeting.	Seems fine	
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

Source(s): Authors' own work

As a result of the review process, an understanding was developed that the same knowledge could apply to different Strategic/Tactical/Operational level activities. Then, with descriptors derived from Bloom's Taxonomy, the final version for each job role was established. An example of knowledge terms that underpin the strategic activities relating to the Operations/Supply Chain Management/Logistics Director job role is shown in Table 2.

It was also noted that job roles, activities and knowledge terms would undoubtedly change with time and that a regular review process was considered an essential part of this closed-loop methodological approach.

4.4 Step 4. Identify the job role knowledge gaps

For each job role, the user's knowledge required to undertake the activity was identified by using a structured two-stage multiple choice questionnaire approach. Each activity was assessed using two rounds of questions. A list of questions was developed to assess the existence of the knowledge requirements for each activity. If a question was answered incorrectly, the user would be directed to a pool of resources designed to provide information related to the specific knowledge. The user then attempted a second attempt at a different version of the same question, resulting in two probable outcomes. If they answered correctly, it indicated they had gained the knowledge necessary to understand the activity. If they failed to answer correctly, the knowledge gap was recorded.

Results: As the user progressed through the assessment of knowledge for each activity, the knowledge gaps for all the activities relating to the Job Role were established. This outcome determined the training needs created at the individual level, aggregated by all individuals in an organisation, and more broadly across the sector.

4.5 Step 5. An action plan for individual/organisational/sectoral training requirements towards job role visibility

This step contributed to understanding training needs as an essential requirement for developing the knowledge structure of the organisation, which is further considered a dynamic activity that constantly changes over time (Dobroszek, 2020). At the recruitment stage, it assists individuals in search of employment in a sector to clearly understand what activities and knowledge are required for each job role and their suitability for the role, and at the development stage, in managing their career aspirations and expectations (Flöthmann *et al.*, 2018). Where there was a gap between knowledge requirements and skills and competencies required in a job role, the necessary action plans for training needs were established at the individual and then at the organisational or sector-related level.

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 towards 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.

5. Discussions and conclusions

This research contributes to the theory development of job role clarity as part of SCV. 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).

In identifying the core skills and knowledge requirements, consistent with Brusset (2016), this research found the relevance of knowledge and activities of actors related to their job roles across a supply chain as a driving force to information capability and competency needs. This resulted in clarity of each job role, overcoming an existing barrier in SCV (Kalaiarasan *et al.*, 2022).

By providing a methodology to develop job role requirements, this paper contributed to framing knowledge, activity requirements and training needs. This results in developing an intellectual architecture of strategic, tactical and operational roles with a balance of relevant level descriptors. Consistent with the findings of Liboni *et al.* (2019), it is recommended that SCM managers and departments work closely with HR departments to understand the primary skills, knowledge gaps and training requirements.

It also recognises the global challenges of SCV and the need for consistency across supply chains, with the need to apply the method at an individual, organisational and sectoral level for job role clarity.

At an individual level, the proposed methodology will aid personal knowledge development for each job role and help guide and develop career aspirations for lifelong learning. It will inform the educational needs of the individual to fulfil the job role requirements and support wellbeing of the individual. Further, this approach will benefit the person undertaking the job role by clarifying the requirements to achieve the defined objectives, leading to personal satisfaction, similar to the findings of Birou and Hoek (2022).

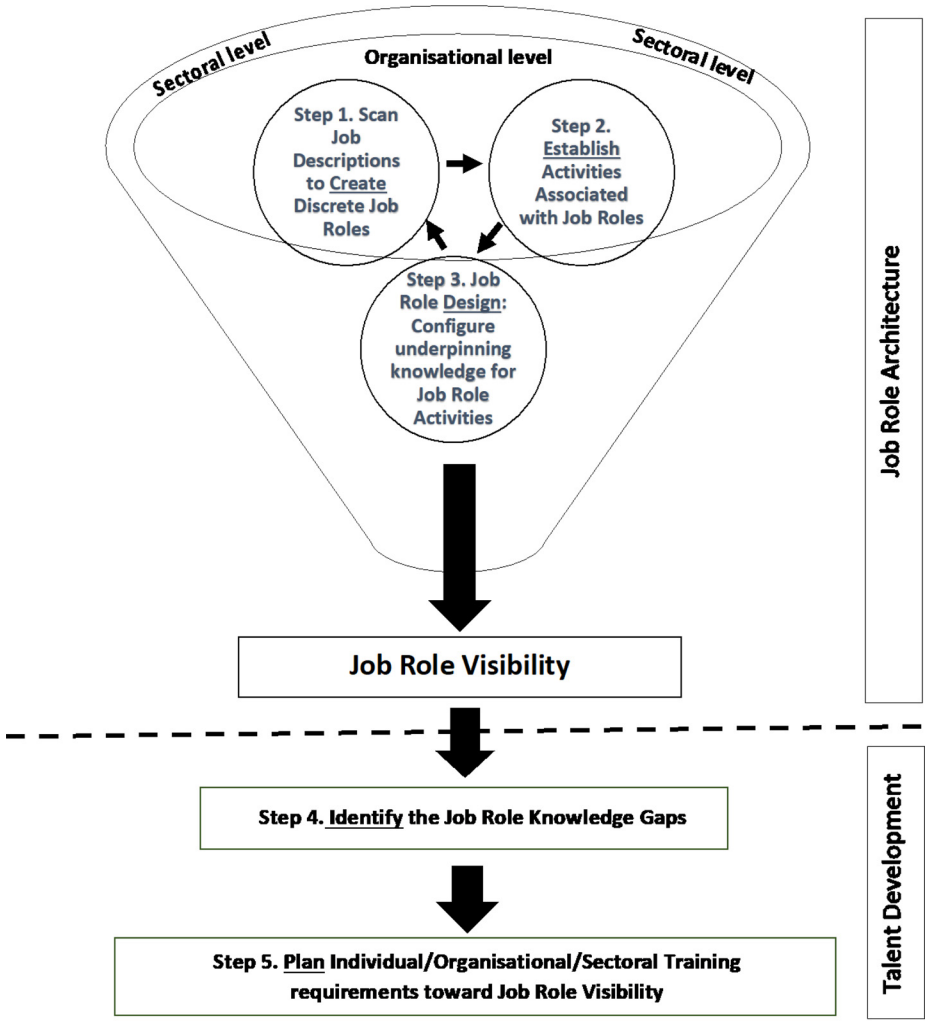
At an organisational level, the developed methodology provided transparency and clarity for each job role's specification and boundaries, enabling the development of an effective organisational structure. This visibility in job roles creates value for the HR function by drawing clear lines of responsibility, accountability and personal development for each role that promotes an organisation focussed on effective

Table 2 An example of knowledge terms underpinning the strategic activities relating to the operations/supply chain management/logistics director job role

Job role 3		Operations/SCM/Logistics Director Knowledge								
Strategic	**Activities**	**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 tdoption	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 sharing with supplier; IT evaluation	K8. Strategy formulation process	K35. Cross-disciplinary decision-making	K55. Sourcing management			
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				

Source(s): Authors' own work

Figure 2 Job role requirement five-step summary across a supply chain



Source(s): Authors' own work

customer service (Liboni *et al.*, 2019). Further, this methodology makes internal grading for remuneration much simpler, as it is a transparent process that allows for a consistent and open assessment for an equitable determination of outputs with a need to offer training and economic incentives at all hierarchical levels, consistent with the findings of Vivares-Vergara *et al.* (2016). This is responds to Birou and Hoek (2022), who argued against ignoring the need to link talent development with success, recognition of talent, promotion, and pay impact. We have shown the benefits derived from a transparent job role methodology, which establishes resources with skills and knowledge according to the job roles using a universal language in different markets.

At the sectoral level, developing 16 job roles across the whole fashion supply chain allowed visibility from the first-level supplier to the final retailer and the service roles that supported those job roles along the supply chain. The visibility of each job role within a supply chain contributes to the desired consistency of information flow (Barratt and Barratt, 2011). This contribution enables consistency of terminology across a supply chain, which can remove the potential mismatch of knowledge and activities in each job role and lead to a collective understanding of training requirements for each job role across the supply chain (Kalaiarasan, *et al.*, 2022). Further, it has the potential to enable consistency of remuneration across and between supply chains with similarity of salary scales matching their knowledge and skills requirements. The developed methodology will aid the removal of barriers to global talent management capabilities, which are often seen as difficult and complex across national and international supply chains (Schuler *et al.*, 2011). Table 3 below summarises the contribution and impact of the main research results.

6. 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

Table 3 A summary of the contribution and impact of the main research results

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 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

Source: Authors' own work

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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Appendix

Table A1 An example of a list of knowledge requirements for the identified job roles

ID	Name (EN)	Group
K1	Performance evaluation	Financial
K2	KPIs	Financial
K3	Budgeting	Financial
K4	Quality	Quality
K5	Service	Buying
K6	Sustainability	Quality
K7	Ethical	Quality
K8	Strategy formulation process	Business planning
K9	How to maintain the relationship (with supplier)	Buying
K10	Negotiation	Buying
K11	Developing a communication plan	Business planning
K12	Stages of interaction with the supplier (phases)	Buying
K13	Assessing the importance of information sharing with supplier; IT evaluation	Buying
K14	Incoterms	Buying
K15	How to communicate with the supplier	Buying
K16	How to perform a supplier analysis out if IT system	Buying
K17	Understanding the KPI of vendor rating	Financial
K18	Understanding the source of information	Business planning
K19	Understanding the procedures of escalation	Business planning
K20	Understanding vendor rating system	Business planning
K21	Pricing	Financial
K22	Commercial	Financial
K23	New product development	Quality
K24	Risk assessment	Business planning
K25	Inventory management	Supply chain management

Source(s): Authors' own work

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