'Must-have' Skills and Knowledge for Apparel Merchandising Professionals in South Africa

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Abstract

Employing competent merchandisers has become a global challenge for apparel companies. This study aimed to prioritize merchandising skills and knowledge required to function in merchandising positions. Adaptive conjoint analysis was employed to prioritize 29 identified skills and knowledge types and 116 individual dimensions describing these types. An online survey was developed and administered using Sawtooth Software Inc. A total of 172 merchandising professionals participated in the study. Sawtooth Software built-in regression analysis was used to analyze the survey responses. A priority order for the 29 skills and knowledge types was established, consisting of thirteen 'must-have', thirteen 'fairly-important', and three 'nice-to-have' types. The thirteen 'must-have' skills and knowledge types included a mix of six soft skill types (communication, teamwork, diplomacy, flexibility, positive attitude, managerial), one hard skill type (technology), five explicit knowledge types (retail operations, manufacturing, marketplace awareness, assortment management, product development), and one tacit knowledge (professional experience). Based on the prioritized 29 skills and knowledge types, an apparel merchandising competency framework was adapted for

the South African retail industry. Out of the 116 individual dimensions, only half (58) were determined as essential and included in the final framework. The findings indicate that a competent merchandising professional should have a well-balanced skill and knowledge set to succeed in the apparel retail industry.

1. Introduction

Competent merchandisers are an asset for retail companies as they drive business performance (Frazier & Cheek, 2016; Howse et al., 2000). Merchandising is a specialized function involved in planning, developing, sourcing, and distributing fashion products throughout the supply chain to satisfy target consumers and ensure retailer profitability (Varley, 2014). A major challenge in the South African retail industry is a shortage of skilled and knowledgeable merchandising professionals (W&R Seta, 2020). This skills and knowledge (S&K) gap was identified as an economic priority and viewed as a prerequisite for South African apparel retailers to remain competitive globally.

The problem with fostering a competent retail workforce is not unique to South Africa; it is a global challenge (The State of Skills in the Apparel Industry, 2020). Yet, few studies examined essential merchandising competencies. Scholars who did investigate competencies required for graduates to be employable in retail, business, and merchandising jobs focused primarily on developed economies: Australia (Collet et al., 2015), New Zealand (Jackson, 2013), USA (Chi et al., 2018; Frazier & Cheek, 2016), and UK (Power, 2012). Given the global nature of the apparel retail industry, it is essential to examine the topic from an emerging economy perspective, such as South Africa. Ha-Brookshire (2015) reiterates that to

prepare competent merchandisers for an inherently globalized industry, apparel scholars must adopt a worldview about industry activities, research, and educational practices.

Scholars tend to focus on "devising 'wish lists'" of competencies that graduates should have (Jackson & Chapman, 2012, p. 542). Previous studies identified many relevant S&K essential for professional success in the apparel retail industry (Chi et al., 2018; Frazier & Cheek, 2016; Jacobs & Karpova, 2022). However, these 'wish lists' do not explain which S&K are essential or 'must-have' and which ones are 'nice-to-have' for fashion/apparel merchandisers. To date, a comprehensive list of S&K required for merchandising professionals has not been validated or prioritized. This study aimed to prioritize a list of identified S&K required for apparel merchandisers in South Africa to address this gap.

2. Literature Review

2.1 Competency: Skills and Knowledge

Competency includes relevant skills and knowledge obtained through education, training, and experience to support successful job performance (Sanghi, 2016). To perform and excel in their positions, merchandising professionals must have competencies comprising relevant S&K. Professional skills are divided into soft and hard (Robles, 2012). Soft skills include (a) people-related or *inter*personal skills and (b) personal attributes or *intra*personal traits (Jacobs & Karpova, 2019). Interpersonal (e.g., teamwork, communication, leadership) and intrapersonal skills (e.g., flexibility, positive attitude, self-management) were found to be essential in the cross-functional, globalized apparel retail industry across different countries (Alzahrani & Kozar, 2017; Chi et al., 2018; Frazier & Cheek, 2016). Hard skills refer to (a) a person's technical abilities specific to work-related practices and (b) skills related to cognitive abilities or higher-order thinking (Robles, 2012). Technical skills, which entail the mastery of procedures and techniques to perform tasks (i.e., numeracy, use of technology and software programs), are necessary for merchandisers to support, coordinate, and perform their daily

responsibilities (Chi et al., 2018; Fiorito et al., 2010). Conceptual or thinking skills (e.g., critical thinking, problem-solving, creativity) are not necessarily discipline-specific (Robles, 2012) but are vital hard skills for merchandisers to make strategic decisions and solve problems throughout the supply chain (Chida & Brown, 2011; Jacobs & Karpova, 2020).

Various studies highlight the importance of discipline-specific knowledge in creating a competitive advantage in the apparel industry (Danskin et al., 2005; Ha-Brookshire & Hawley, 2013). It is typical to classify knowledge into explicit and tacit (Nonaka et al., 2000). Explicit knowledge is what graduates have formally learned in their field of study or subject matter, while tacit knowledge is gained informally from personal and professional experiences. Fundamental explicit knowledge (such as textiles, construction methods, and retail principles) enhances merchandising professionals' success in the industry (Chi et al., 2018; Howse et al., 2000; Reeves-DeArmond et al., 2015). Similarly, for apparel companies to differentiate themselves from competitors, merchandisers with knowledge in forecasting, product development, sourcing, and supply chain management are essential (Alzahrani & Kozar, 2017; Danskin et al., 2005; Ha-Brookshire, 2015). Tacit knowledge, often acquired from on-the-job training and experience, is important to perform in merchandising positions across different contexts (Frazier & Cheek, 2016).

2.2 Apparel Merchandising Competency (AMC) framework

A competency framework serves as a descriptive tool that outlines and integrates S&K needed to perform in a position effectively and efficiently (Sanghi, 2016). Competencies included in a framework reflect the content of a specific discipline (Collet et al., 2015). According to Jackson and Chapman (2012, p. 114), competency frameworks in vocational fields are especially valuable for "addressing employability skills in education and in the workplace where they provide significant input into recruitment, selection, succession planning and promotion decisions." The AMC framework provides a systematic typology for organizing

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S&K needed to perform responsibilities across different positions within the merchandising function (Jacobs & Karpova, 2019). According to the framework, all individual S&K are classified into several S&K *types* that form seven distinct S&K *categories*: interpersonal, intrapersonal, technical, thinking/conceptual, general apparel knowledge, merchandising knowledge, and experience. The seven S&K *categories* are organized into four *main constructs*: soft skills, hard skills, explicit knowledge, and tacit knowledge. The framework is fluid and can accommodate any new individual merchandising S&K because it is based on a strong theoretical foundation for classifying and organizing different S&K.

2.3 Merchandising competencies in South Africa

Our research builds upon an exploratory study where 116 individual S&K important for apparel merchandisers in South African retail were identified (Jacobs & Karpova, 2020). Using the AMC framework, the 116 individual S&K were systematically organized into 29 S&K *types* (Figure 1; dotted boxes in level 3). Then the 29 types were classified into one of the seven *categories* (dashed boxes in level 2) that made up the four *main constructs*: soft skills, hard skills, explicit knowledge, and tacit knowledge (solid line boxes in level 1). The 29 merchandising S&K types specific to the South African retail context included:

- ten *soft skill* types: four *interpersonal* skill types (communication, diplomacy, leadership, teamwork) and *six intrapersonal* skill types (administrative/managerial, flexibility, integrity, positive attitude, responsibility, self-management),
- seven *hard skill* types: two *technical* skill types (math-related, technology) and five *thinking/conceptual* skill types (critical thinking, innovation, metacognition, problem-solving and decision-making, strategic thinking),
- eleven *explicit knowledge* types comprised of four *general apparel knowledge* types (fashion and consumer markets, manufacturing, sustainability, textiles) and seven
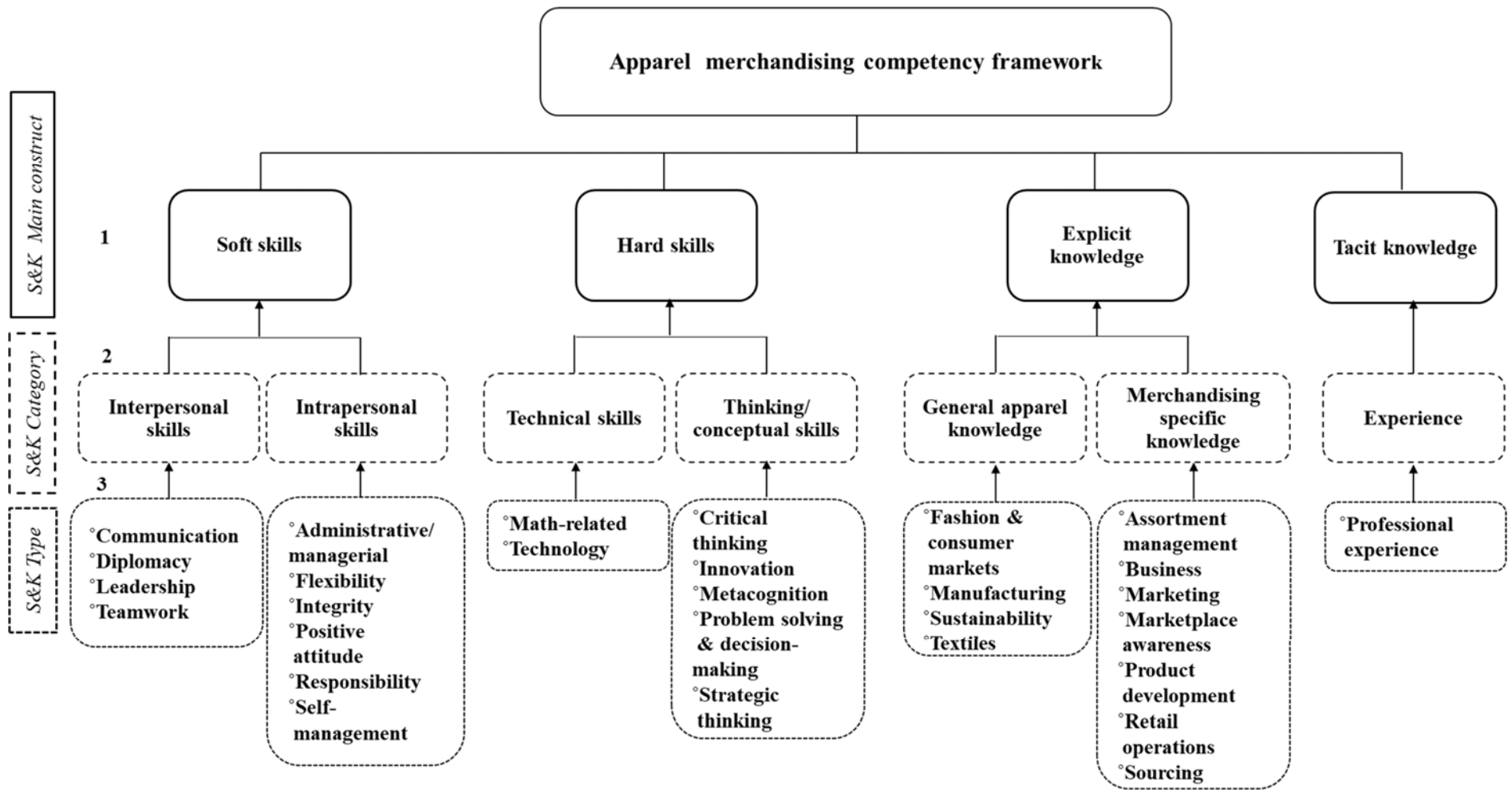
Figure 1. South African merchandising S&K according to the apparel merchandising competency framework

merchandising knowledge types (assortment management, business, marketing, marketplace awareness, product development, retail operations, sourcing), and

- one tacit knowledge type related to professional experiences, such as internship, work at retail stores, or on the job training.

However, the identified 116 individual S&K and 29 S&K types had no priority and appeared to be equally important for employability and workforce preparation and training. Given the limited resources and time constraints educators and retailers are confronted with, it is critical to distinguish between essential merchandising S&K and 'nice-to-have' for curriculum and program development and upskilling and retraining workers.

3. Methodology

3.1 Adaptive conjoint analysis (ACA) research design

ACA was employed to prioritize the identified merchandising S&K (Figure 1). Developed for choice modelling, ACA is based on the decomposition of multiple attributes to determine the relative importance of one attribute, or a combination of attributes, over another (Mazzocchi, 2008). In other words, participants are presented with all the options and make a series of choices (trade-offs) between attributes to eliminate unimportant ones and 'build' a set of attributes they perceive to be most important or desirable (Hair et al., 2010). In our study, participants selected S&K types they believed were essential for merchandisers. ACA was the appropriate research design because the use of importance scales would have resulted in participants rating all or nearly all S&K types as important, not allowing prioritization (Iacobucci & Churchill, 2010).

Predefined attributes are the factors or variables measured in ACA; they form the basis of ACA survey design (Mazzocchi, 2008). The 29 S&K types identified in a preceding qualitative inquiry were the predefined attributes in our study. Each attribute has several levels or dimensions that describe the attribute (Hair et al., 2010), which in our study were the 116

individual S&K. For example, the four *individual dimensions* describing the flexibility skill type (attribute) were: adaptable, open-minded, thick-skinned, and patient (Figure 1). ACA permits participants to compare and make trade-offs between up to 30 attributes with a maximum of ten dimensions per attribute (Hair et al., 2010). The ACA method was suitable for our study as it could accommodate a large number of S&K types, each with multiple individual dimensions, included for prioritization.
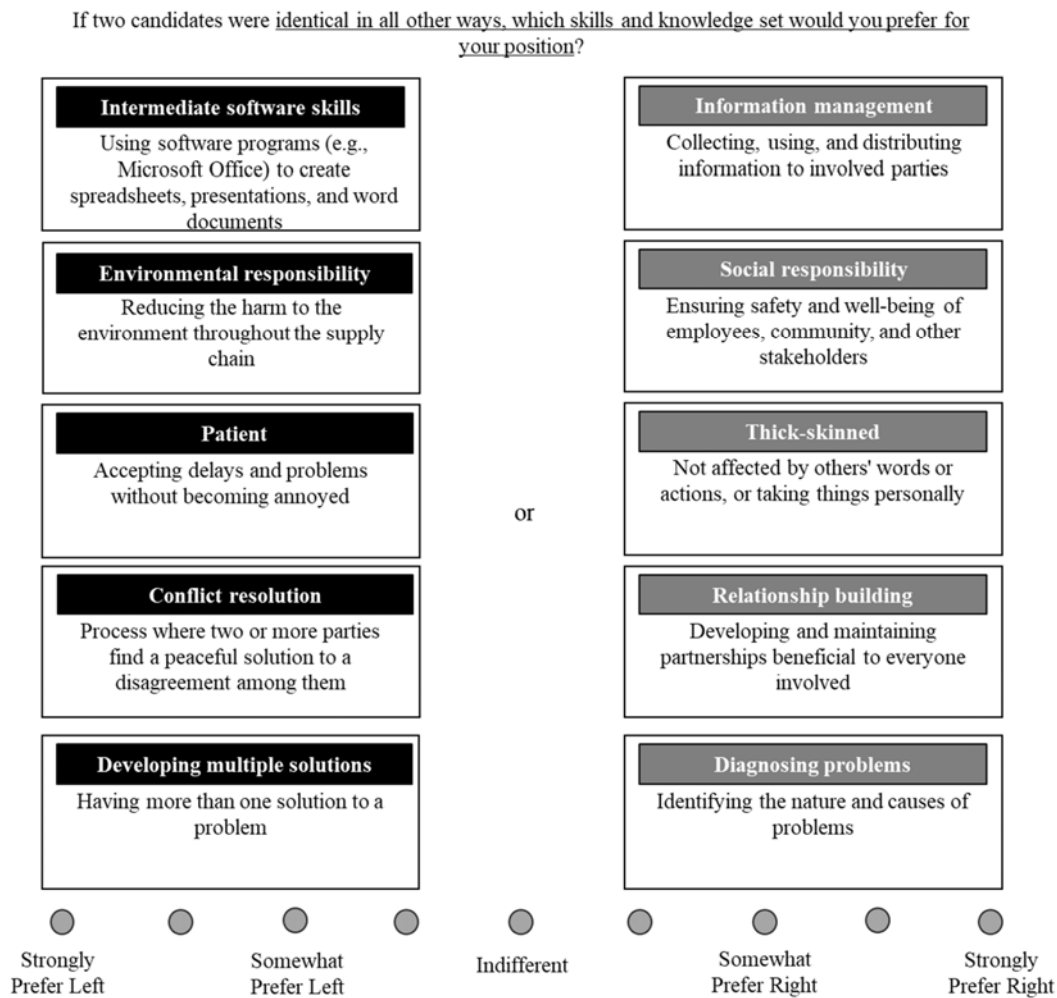

Figure 2. Pair-Wise Profile Task during Stage 3

Sawtooth Software Inc., specifically developed for conjoint analysis modelling, was used to build and administer an electronic survey. The 29 S&K types (attributes), each with

respective dimensions, were programmed into the software to create the ACA survey. For clarity, all dimensions were described using short phrases to make them relatable to merchandising situations (Hair et al., 2010). For example, each dimension shown in Figure 2 is accompanied by a brief description. The survey concluded with demographic questions: age, gender, current industry position, years of industry experience, education, type of retail company, and geographic location of the company. The survey was pre-tested with three industry professionals to ensure the 29 S&K types and 116 corresponding dimensions included in the questionnaire were clear and understandable.

3.2 Data collection

A Human Subject Review Board approved the study. Participants were recruited using three strategies to ensure greater participation and reach merchandisers from different regions, companies, and positions within the South African apparel retail industry. First, professionals were invited to participate in the study via email, using industry contacts of an apparel program in South Africa. The invitation email included the purpose of the study, consent form, and survey link. Next, a snowball sampling strategy was employed. At the end of the survey, participants were asked to refer other merchandisers within and outside of their companies. Finally, the survey link with a study description was shared on social media platforms (Facebook and LinkedIn). A screening question ensured that only merchandisers working in the South African apparel retail industry for at least two years participated in the study. The survey took about 30 minutes to complete.

3.3 Adaptive conjoint analysis survey procedure

The ACA survey followed four standard stages: (1) build your own task; (2) screening task; (3) pair-wise profile task; and (4) calibration task. In Stage 1, Build Your Own Task, participants were introduced to the 29 S&K types (attributes) and 116 individual S&K

(dimensions). Participants rated each dimension within the 29 types indicating how desirable they were for their position using a seven-point Likert-type scale ranging from "not desirable" to "extremely desirable." The goal was to let participants indicate the desired dimensions within each S&K type (Hair et al., 2010). Stage 2, the screening task, was automatically customized for each participant based on their rating of individual dimensions in Stage 1. In other words, each participant had their own unique survey based on the desirability ratings of the dimensions in Stage 1. Participants completed 29 screening tasks, one per each of the 29 S&K types. Each screening task included two individual dimensions (i.e., the lowest and the highest dimensions as rated in Stage 1) within the same type. Participants were asked how important the difference between the lowest and the highest dimensions was for their position, using a seven-point Likert-type scale ranging from "not important" to "extremely important." The goal of Stage 2 was to evaluate the differences between dimensions and consider the relative importance of having one particular dimension over another in each S&K type (Hair et al., 2010). At the end of this stage, Sawtooth Software determined the importance of the individual dimensions for each of the 29 S&K types to generate profiles for Stage 3. Individual S&K dimensions rated least desirable in Stage 1 and 2 were omitted from further evaluation. From this point, the customized questionnaire focused on combinations of desirable /important dimensions within each S&K type (Huertas-Garcia et al., 2016).

Stage 3, pair-wise profile task, entailed customized profiles developed based on the first two stages. The profiles were based on each participant's preferred individual S&K dimensions within each S&K type (Hair et al., 2010). Sawtooth Software generated 20 personalized profiles for every participant. Each profile included five individual S&K dimensions representing a different S&K type. The 20 personalized profiles were randomly arranged into ten pairs for a pair-wise comparison and rating. Participants completed ten pair-wise profile tasks, where they indicated their preference for the left or right profile on a nine-point scale, "strongly prefer left" to "strongly prefer right" profile. Figure 2 presents one of the ten

customized pair-wise profiles created from a participant's most preferred individual S&K dimensions selected during Stages 1 and 2. This participant compared two individual S&K describing the following S&K *types*: (1) technology (intermediate software skill vs information management); (2) sustainability (environmental vs social responsibility); (3) flexibility (patient vs thick-skinned); (4) diplomacy (conflict resolution vs relationship building); and (5) problem-solving and decision-making (develop multiple solutions vs diagnosing problems). In Stage 4, participants completed a calibration task. Based on the Stage 3 ratings, five customized profiles were generated for each participant; each profile included the five highest rated individual S&K dimensions. Participants indicated how likely they would hire a professional with the set of five individual S&K by giving a score between 0 (highly unlikely) and 100 (highly likely).

3.4 Sample

A total of 172 merchandising professionals participated in the study (Table 1). The sample consisted of 87% women and 13% men, and their ages ranged from 22 to 61 years ($M =$ 35). Most participants had a Baccalaureate degree (59%), followed by a three-year associate degree (18%) and a Master's degree (15%). College majors included apparel retail management (36%), business management (12%), fashion design (10%), retail management (8%), and financial management (8%). Most participants (70%) had more than ten years of experience in the retail industry, and the rest had between two to ten years of experience.

Half of the merchandisers (51%) worked for companies located in the Western Cape province; more than a third (38%) were in Gauteng province, and 11% in Kwazulu-Natal province. The type of companies varied from department stores (39%), specialty retailers (29%), discount retailers (20%), boutiques (5%), and sourcing, manufacturing, and wholesale companies. A third of the participants (33%) worked as buyers, 29% were planners, 9% were merchandisers, 8% were product developers, 4% worked in quality assurance, and the rest were

Table 1. Sample description

Characteristic	Frequency	%	Characteristic	Frequency	%
Gender			**Location in South Africa**		
Female	149	86.62	Western Cape (Cape Town)	87	50.58
Male	23	13.37	Gauteng (Johannesburg and Pretoria)	65	37.79
Age (Missing = 2)			Kwa-Zulu Natal (Durban)	18	10.47
21-30	63	36.62	Eastern Cape and Free State	2	1.16
31-40	68	39.53	**Type of company**		
41-50	27	15.69	Department store	67	38.95
51- >60	13	7.55	Specialty retailer	50	29.07
Highest level of education			Discount/Off-price retailer	34	19.77
Baccalaureate degree	101	58.72	Boutique	8	4.65
Diploma (3-year degree)	32	18.60	Other: manufacturing, wholesale, sourcing	13	7.55
Masters degree	26	15.12	**Job title**		
High school	11	6.39	Buyer	56	32.56
PhD degree	2	1.16	Planner	49	28.49
Major of the highest level of education			Merchandiser	15	8.72
Clothing retail management	62	36.0	Product developer	14	8.14
Business management	21	12.21	Quality assurance	7	4.07
Fashion design	17	9.88	Brand manager	6	3.49
Financial management (general)	13	7.56	Distribution/allocation planner	6	3.49
Retail management (general)	13	7.56	Sourcing coordinator	4	2.33
Fashion management	6	3.49	Other: marketing, retail operations	15	8.72
Product development	5	2.91	**Years in current position** (Missing = 1)		
Merchandising management	4	2.33	< 1 year	15	8.72
Textile design	4	2.33	2-4 years	100	58.14
Logistic management	3	1.74	5-7 years	26	15.12
Other: marketing, consumer science, IT	24	12.21	8-10 years	12	6.98
Retail industry experience, years			>10 years	18	10.47
2-10	52	30.24			
>10 years	120	69.76			

brand managers, sourcing coordinators, and marketers (Table 1). Length of employment in their current positions ranged from 3 months to 37 years.

3.5 Data analysis

Sawtooth Software built-in regression analysis was used to analyze the ACA survey responses. The Ordinary Least Squared method was employed to calculate the utility values for each of the 116 individual S&K. The utility value indicates the relative importance and ranks the individual S&K dimensions within each type from most important to least important to measure the predicted preference for an attribute, or S&K type (Hair et al., 2010). ACA analysis output consists of the relative importance score (RIS) for S&K types and the average utility value (AUV) for individual S&K dimensions. RIS indicates a mean score that points to the relative importance or priority of each S&K type. AUVs are the preference score calculated by averaging the preference/desirability ratings of each dimension (individual S&K) within an attribute (S&K type) (Iacobucci & Churchill, 2010). The priority of each S&K type is determined by summing or totaling the AUVs of individual S&K within each S&K type (Mazzocchi, 2008).

4. Results and Discussion

4.1 Prioritized skills and knowledge types

The goodness of fit measure ($R^2 = 60\%$) indicated a good fit (Hair et al., 2010) and that the ACA regression analysis accurately captured the merchandising professionals' S&K preferences. Table 2 shows the overall priority order for the 29 S&K types measured in the ACA survey (skills are in Italics). The priority or importance of the 29 S&K types was assessed by the relative importance score (RIS), which adds up to 100%. S&K types with the highest RIS scores have the highest priority or importance for apparel merchandising professionals employed by retail companies in South Africa. A one-way ANOVA was

Table 2. Priority order of the 29 merchandising skills and knowledge types based on Relative Importance Score (RIS)

#1 Priority order: Must-have S&K type	RIS, % (*SD*)	#2 Priority order: Fairly-important S&K type	RIS, % (*SD*)	#3 Priority order: Nice-to-have S&K type	RIS, % (*SD*)
Communication	4.55 (1.33)	*Self-management*	3.60 (1.45)	Textiles	2.42 (1.24)
Retail operations	4.26 (1.26)	Business	3.60 (1.30)	*Innovation*	2.27 (1.24)
Technology	4.17 (1.60)	Marketing	3.59 (1.29)	Sustainability	1.57 (0.81)
Professional experience	4.15 (1.25)	*Leadership*	3.58 (1.19)		
Manufacturing	4.04 (1.62)	Sourcing	3.54 (1.33)		
Diplomacy	4.03 (1.20)	*Problem-solving/decision-making*	3.40 (1.26)		
Marketplace awareness	3.88 (1.33)	*Responsibility*	3.27 (1.48)		
Assortment management	3.87 (1.63)	*Math-related skills*	3.22 (1.44)		
Flexibility	3.87 (1.42)	*Metacognition*	3.07 (1.19)		
Administrative/managerial	3.84 (1.30)	Fashion and consumer markets	2.91 (1.37)		
Positive attitude	3.77 (1.24)	*Integrity*	2.83 (1.50)		
Teamwork	3.65 (1.36)	*Critical thinking*	2.76 (1.21)		
Product development	3.64 (1.30)	*Strategic thinking*	2.68 (1.09)		

Notes: *N* = 172; *SD* = standard deviation. Initially, self-management did not group into must-have, nor into fairly-important group, however, because there was no difference in the means between self-management and business, this skill was included into the fairly-important group.

performed to establish statistically different groups within the 29 S&K types based on the RIS. The analysis showed an overall significant difference between the RISs of the 29 S&K types: $F(1, 28) = 43.5$, $p < 0.001$. Based on the RIS, the Scheffe post hoc test ($\alpha = 0.05$) determined three homogeneous sub-sets within the 29 S&K types. As a result, three groups were determined. All three groups had p-values larger than the alpha value of significance ($\alpha < 0.05$), indicating no significant difference between the RIS within each of the three groups. The highest priority group ($p = 0.055$) consisted of 13 'must-have' S&K: seven skill types and six knowledge types. These 'must-have' skills and knowledge types were the most important for merchandisers. The medium priority group ($p = 0.05$), labelled as 'fairly-important', consisted of nine skills and four knowledge types. The lowest priority group ($p = 0.169$), labelled as 'nice-to-have', included one skill and two knowledge types. As a result, three groups with different priorities required for apparel merchandising professionals were established.

4.2 Importance of individual skills and knowledge

Average utility value (AUV) indicates the importance of an individual skill or knowledge dimension over another using both a numeric value and direction (positive/negative). More critical individual S&K have higher positive AUVs within the respective S&K type, and less important individual S&K have lower or negative AUVs (Hair et al., 2010). The AUVs of individual S&K can only be compared within the same S&K type and are not comparable with individual S&K from other types. For example, in the communication skill type, the AUVs of written and verbal skills can be compared, but they cannot be compared with individual skills from the teamwork skill type or product development knowledge type. The 116 individual S&K from highest to lowest importance are presented within the respective S&K types in Tables 3-5. Due to limited space, only 'must-have' S&K types with their respective important individual S&K were discussed. 'Fairly-important' and 'nice-to-have' S&K types are presented in Tables 3-5 but not discussed.

Table 3. Importance priority of soft skill types and individual dimensions

Soft skill type	RIS, %	Individual skill dimension	AUV
Interpersonal skills			
Communication*	4.55	Briefing/informing**	17.47
		Presentation skills**	6.25
		Listening skills**	4.29
		Keeping open-communication line**	3.76
		Verbal skills**	0.67
		Writing skills	-32.44
Diplomacy*	4.03	Building relationships**	29.46
		Negotiation**	17.33
		Respectful	-6.96
		Conflict resolution	-15.69
		Persuasive	-24.15
Teamwork*	3.65	Collaborative**	20.31
		Helpful**	5.57
		Trusting others**	3.27
		Supportive	-29.15
Leadership	3.58	Identify others' strengths and weaknesses **	15.61
		Motivating others**	5.62
		Recognizing others' work	-0.15
		Coaching/mentoring	-3.30
		Delegating tasks	-17.78
Intrapersonal skills			
Flexibility*	3.87	Adaptable**	23.43
		Open-minded**	11.03
		Thick-skinned**	2.24
		Patient	-36.69
Administrative/ Managerial*	3.84	Multi-tasking**	9.64
		Time management**	5.03
		Follow-up on tasks	-2.39
		Organized	-3.07
		Prioritizing	-3.41
		Implement ideas	-5.79
Positive attitude*	3.77	Driven**	32.28
		Passionate**	21.66
		Confident**	18.93
		Optimistic	-25.23
		Compassionate	-47.64
Self-management	3.60	Hard working**	18.20
		Stress tolerance**	16.16
		Perseverance	-3.94
		Work-life balance	-30.42
Responsibility	3.27	Meets deadlines**	21.38
		Accountable	-3.51
		Reliable	-2.70
		Pedantic	-15.17
Integrity	2.83	Ethical**	13.43
		Honest	-3.72
		Fair	-9.71

Note: RIS = relative importance score; AUV = average utility value; * - 'must-have' soft skill types;
** - important individual soft skills.

Table 4. Importance priority of hard skill types and individual dimensions

Hard skill type	RIS, %	Individual skill dimension	AUV
Technical skills			
Technology*	4.17	Intermediate software skills**	26.81
		Information management skills**	15.17
		Product lifecycle management (PLM) software skills**	7.28
		Computer-aided design software	-49.26
Math-related	3.22	Pricing**	18.70
		Budgeting	-3.29
		Costing	-15.40
Thinking/conceptual skills			
Problem-solving and decision-making	3.40	Decisiveness**	5.50
		Reactive**	5.05
		Developing multiple solutions	-2.89
		Diagnosing problems	-3.60
		Intuition to make decision	-4.08
Metacognition	3.07	Lifelong and self-learning**	16.26
		Self-awareness	-4.97
		Realistic judgement of abilities	-5.30
		Inquisitive	-5.99
Critical thinking	2.76	Evaluation**	16.30
		Interpretation of information	-0.31
		Analytical	-15.98
Strategic thinking	2.68	Proactive**	12.48
		Planning	-9.01
		Future thinking	-3.47
Innovation	2.27	Resourcefulness**	25.00
		Creativity	-25.00

Note: RIS = relative importance score; AUV = average utility value; * - 'must-have' hard skill types; ** - important individual hard skills.

Table 5. Importance priority of explicit and tacit knowledge types and individual dimensions

Knowledge type	RIS, %	Individual knowledge dimension	AUV
Explicit knowledge: General apparel			
Manufacturing*	4.04	Quality assurance**	39.75
		Production processes**	21.80
		Construction techniques	-12.43
		Pattern making	-49.12
Fashion and consumer markets	2.91	Fashion forecasting**	13.77
		Consumer behavior**	10.06
		Fashion cycles	-23.83
Textiles	2.42	Fabrics **	2.15
		Textiles basics and terms**	1.11
		Product care/maintenance	-3.26
Sustainability	1.57	Environmental responsibility**	11.54
		Social responsibility	-11.54
Explicit knowledge: Merchandising specific			
Retail operations*	4.26	Retail principles**	45.49
		Quick response**	17.02
		Distribution	-16.53
		Global retail operations	-45.98
Marketplace awareness*	3.88	Competition**	47.45
		Social awareness**	6.54
		Economic awareness	-8.42
		Political awareness	-45.56
Assortment management*	3.87	Range building**	9.85
		Product lifecycle management**	1.95
		Stock replenishment	-0.74
		Buying processes	-11.06
Product development*	3.64	Commercial appeal**	18.06
		Product aesthetics**	16.12
		Line (range) development	-13.92
		Sizing and fit	-20.27
Business	3.60	Commercial awareness**	49.00
		Accounting	-10.05
		Finance	-38.96
Marketing	3.59	Product positioning**	15.81
		Customer service**	9.69
		Branding**	8.97
		Promotions and visual merchandising	-0.92
		Market segmentation	-33.55
Sourcing	3.54	Establishing suppliers**	15.79
		Supply chain management**	6.56
		Logistics	-2.78
		Trade policies and regulations	-19.58
Tacit knowledge: Experience			
Professional experience*	4.15	Eye for fashion and product**	27.69
		On the job training**	19.84
		Corporate culture awareness	-0.13
		Company structure awareness	-11.53
		Store experience	-12.59
		Internship(s)	-23.28

Note: RIS = relative importance score; AUV = average utility value; * - 'must-have' knowledge type; ** - important knowledge dimension.

4.3 Important soft skills for merchandising professionals

The interpersonal and intrapersonal skill types are presented in Table 3 in prioritized order, with individual skills nested within the respective types from the highest to lowest importance. Interpersonal skill types prioritized as "must have" were: communication (RIS = 4.55%), diplomacy (RIS = 4.03%), and teamwork (RIS = 3.65%). Communication received the highest priority of all 29 S&K types (Table 2). Frazier and Cheek (2016) reported the importance of communication and teamwork as interpersonal competencies for merchandising. Merchandisers constantly need to share technical information about products with nontechnical people (e.g. managers, marketers) and brief their suppliers (Muhammad & Ha-Brookshire, 2011). In support, five individual communication skills: briefing/informing (AUV = 17.47), presentation skills (AUV = 6.25), listening skills (AUV = 4.29), keeping open-communication line (AUV = 3.76), verbal skills (AUV = .67) were identified as important in our study. Diplomacy, building relationships (AUV = 29.46) and negotiating (AUV = 17.33), was rated an essential skill type. This might be because the global nature of the apparel industry requires establishing partnerships and building relationships across organizational and cultural boundaries (Karpova et al., 2011; Zhao & Guo, 2018). Likewise, teamwork is important, as merchandising is a team-oriented process that interlinks with many supply chain members (Varley, 2014), requiring such skills as being collaborative (AUV = 20.31), helpful (AUV = 5.57), and trusting others (AUV = 3.27).

Intrapersonal skill types prioritized as "must have" personal traits for merchandising professionals included flexibility (RIS = 3.87%), administrative/managerial (RIS = 3.84%), and positive attitude (RIS = 3.77%). Flexibility defines a person's ability to deal with change, which is intrinsic to the fast-paced apparel industry. Three essential individual skills from the flexibility type, adaptable (AUV = 23.43), open-minded (AUV = 11.03), and thick-skinned (AUV = 2.24), emphasized the need to constantly adapt to a evolving global apparel industry (Power, 2012). Within the administrative/ managerial skill type, multi-tasking (AUV = 9.64)

and time-management (AUV = 5.03) were established as highly important as the apparel supply chain stretches across countries, uses complex information, and involves many tasks (Muhammad & Ha-Brookshire, 2011). The positive attitude skill type had three individual skills with positive AUVs: driven (AUV = 32.28), passionate (AUV = 21.66), and confident (AUV = 18.93), showing that the right attitude is vital for success in this competitive industry (Alzahrani & Kozar, 2017; Chowdhury & Anon, 2021; Reeves-DeArmond et al., 2015).

4.4 Important hard skills for merchandising professionals

The technical and thinking/conceptual skill types are presented in Table 4 in order of the established priority (Table 2), with individual skills nested within the respec

tive types from the highest to lowest importance. Technology (RIS = 4.17%) was prioritized as the third most important "must-have" skill type out of all 29 S&K types. Within the technology type, three skills were fundamental: intermediate

ware skills (AUV = 26.81), information management (AUV = 15.17), and product lifecycle management software (AUV = 7.28). This confirms the importance of technological aptitude for merchandisers to do their jobs. Merchandising

bilities necessitate proficiency in general Microsoft Office programs, information management and more advanced software skills such as product lifecycle

ment (Fiorito et al., 2010). The challenge for educators is to embed technology into every aspect of curricula.

Thinking/conceptual skill types did not emerge as "must-have" skills. Instead, four thinking/conceptual skill types were prioritized as "fairly-important": problem-solving and decision-making, metacognition, critical thinking, and strategic thinking. The result contradicts previous research findings from developed economies that identified thinking/conceptual skills as critical for apparel professionals (Chida & Brown, 2011; Frazier & Cheek, 2016). Within the thinking/conceptual skill types, individual skills such as lifelong and self-learning

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(metacognition type), evaluation (critical thinking type), and proactive (strategic thinking type) received relatively high AUVs. *[Insert Table 4 here]*

4.5 Important explicit and tacit knowledge for merchandising professionals

The types of general apparel knowledge and merchandising specific knowledge are presented in Table 5 in the established priority order (Table 2) Manufacturing-related knowledge (RIS = 4.04%) received the highest priority of all the general apparel knowledge types and the fifth highest out of all 29 S&K types. Within the manufacturing-related knowledge, quality assurance (AUV = 39.75) and understanding production processes (AUV = 21.80) were critical. This confirms Reeves-DeArmond et al.'s (2015) conclusions that knowledge about manufacturing processes makes merchandisers most competitive. Even though knowledge related to textiles (RIS = 2.42%) and sustainability (RIS = 1.57%) emerged as important in the preceding exploratory study (Jacobs & Karpova, 2022), they were prioritized as "nice-to-have", the lowest priority out of the 29 S&K types (Table 2). This is in line with the State of Skills in the Apparel Industry report (The State of Skills in the Apparel Industry, 2020), where 89% of professionals from around the world "highlighted sustainability as a key issue" and only 38% saw it "as an important area for training" (p. 13). Even though South African apparel retail professionals viewed textiles and sustainability knowledge as essential, it was not a priority when choosing between other relevant skills and knowledge types.

Merchandising knowledge with 'must-have' priority were: retail operations (RIS = 4.26%; 2nd highest ranking), marketplace awareness (RIS = 3.88%), assortment management (RIS = 3.87%), and product development (RIS = 3.64%). For retail operations knowledge, retail principles (AUV = 45.49) and quick response (AUV = 17.02) surfaced as critical. For marketplace awareness, understanding competition (AUV = 47.45) and social awareness (AUV = 6.54) were determined as vital knowledge for merchandisers. Awareness of direct

competitors and reacting to their strategies were noted in previous research as important skills for fashion buyers (Zhao & Guo, 2018). Similarly, understanding how the social environment shape retailing was highlighted as fundamental for apparel professionals (Ha-Brookshire & Hawley, 2013). Not surprisingly, understanding how to manage assortment (RIS = 3.87%) and develop products (RIS = 3.64%) were 'must-have', including range building (AUV = 9.85), product lifecycle management (AUV = 1.95) as well as product commercial appeal (AUV = 18.06) and aesthetics (AUV = 16.12). These results confirm the importance of merchandisers' knowledge encapsulated by assortment management and product development (Frazier & Cheek, 2016; Jain, Mishra & Mukhopadhyay, 2021). For tacit knowledge, professional experience was found to be a 'must-have' and received the fourth highest priority rating (RIS = 4.15%) of all 29 S&K types (Tables 2 & 5). Specifically, an eye for fashion and product (AUV=27.69) and on-the-job training (AUV=19.84) were considered significant. In line with these findings, Muhammad and Ha-Brookshire (2011) concluded that previous work experience was essential for merchandisers.

4.6 Apparel merchandising competency framework for the South African retail industry

Based on the results of this study and utilizing the AMC framework (Jacobs & Karpova, 2019), we developed a framework specific to the South African context. The constructed framework includes the S&K required for merchandising professionals within the South African apparel retail industry (Table 6). Out of the total 116 individual S&K included in the study, only half (58) were determined as essential for merchandisers and included in the final framework (individual S&K with positive AUVs in Tables 3-5). In the framework, the 29 S&K types were divided into three groups:

(a) Thirteen very important or 'must-have' S&K types (highlighted in **bold**);

(b) thirteen 'fairly-important' S&K types (shown in *italics*); and

(c) three 'nice-to-have' S&K types.

Table 6. Apparel merchandising competency framework for the South African retail industry

Competency domain	Cluster	S&K Category	Prioritized S&K type	Individual S&K
Interpersonal competency	Collaboration	Soft skills: Interpersonal	**Communication**	Briefing/informing Presentation skills Listening skills Open-communication line Verbal skills
			Diplomacy	Building relationships Negotiation
			Teamwork	Collaborative Helpful Trusting others
	Leadership		*Leadership*	Identify others' strengths & weaknesses Motivating
Intrapersonal competency	Intellectual openness	Soft skills: Intrapersonal	**Flexibility**	Adaptable Open-minded Thick-skinned
			Positive attitude	Driven Passionate Confident
	Work ethic and conscientious-ness		**Administrative/ managerial**	Multi-tasking Time management
			Self-management	Hard-working Stress tolerance
			Responsibility	Meets deadlines
			Integrity	Ethical
Cognitive competency	Cognitive processes and strategies	Hard skills: Technical	**Technology**	Intermediate software Information management PLM software
			Math related	Pricing
		Hard skills: Thinking/ conceptual	*Problem-solving and decision-making*	Decisiveness Reactive
			Metacognition	Lifelong & self-learning
			Critical thinking	Evaluation
			Strategic thinking	Proactive
	Innovation and creativity		Innovation	Resourcefulness
	Knowledge	Explicit knowledge: General apparel knowledge	**Manufacturing**	Quality assurance Production processes
			Fashion and consumer markets	Fashion forecasting Consumer behavior
			Textiles	Fabrics Textiles basics & terms
			Sustainability	Environmental responsibility
		Explicit knowledge: Merchandising knowledge	**Retail operations**	Retail principles Quick response
			Marketplace awareness	Competition Social awareness
			Assortment management	Range building PLM
			Product development	Commercial appeal Product aesthetics
			Business	Commercial awareness
			Marketing	Product positioning Customer service Branding
			Sourcing	Establishing suppliers Supply chain management
		Tacit knowledge Experience	**Professional experience**	Eye for fashion & product On the job training

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It is important to note that within a competency framework, 'must-have' S&K are developed in relation to one another and are supported or enhanced by S&K from 'fairly-important' and 'nice-to-have' categories (Collet et al., 2015). For example, our study found textiles knowledge to be 'nice-to-have' for merchandising professionals. However, textiles form the basic building block of apparel and textile programs (Howse et al., 2000). Knowledge in product development, manufacturing, and assortment management depends on understanding textiles (Ha-Brookshire & Hawley, 2013). The proposed South African AMC framework provides an ordered structure to organize the prioritized S&K for merchandising. and displays how each S&K type and individual dimension link to the related competency cluster and domain.

5. Conclusions and implications

In this study, we created a prioritized list of the merchandising skills and knowledge identified as important by South African apparel retail industry professionals in previous research (Jacobs & Karpova, 2022). Using a common marketing research method, adaptive conjoint analysis, we distinguished between a total of 29 S&K types by dividing them into three statistically different groups in terms of importance for merchandising professionals: 13 'must-have'; 13 'fairly important'; and three 'nice-to-have'.

The thirteen 'must-have' S&K types included a mix of six soft skill types (communication, teamwork, diplomacy, flexibility, positive attitude, managerial), one hard skill type (technology), five explicit knowledge (retail operations, manufacturing, marketplace awareness, assortment management, product development), and one tacit knowledge (professional experience). The thirteen 'fairly-important' S&K 'included: three soft skill types (self-management, leadership, responsibility, integrity), five hard skill types (problem-solving and decision-making, math-related skills, metacognition, critical thinking, and strategic thinking), and four explicit knowledge (business, marketing, sourcing, fashion and consumer markets). The three 'nice to have' S&K types consisted of two explicit knowledge (textiles and

sustainability) and one hard skill (innovation). Scholars have suggested that soft and hard skills might be just as essential as discipline-specific knowledge for apparel professionals (Frazier & Cheek, 2016; Reeves-DeArmond et al., 2015). Our study is the first one to empirically demonstrate that a competent merchandising professional must have a well-balanced academic preparation in terms of discipline content (explicit knowledge) as well as critical soft skills (both inter-and intrapersonal), hard skills (technology), and tacit knowledge (industry experience). While some 'must-haves' S&K were no surprise (e.g., communication, technology, teamwork, retail operations, assortment management, etc.), others were not commonly emphasized/taught in apparel programs as important skills such as diplomacy, flexibility, positive attitude, which came ahead of problem-solving, critical thinking, and even math-related skills. Even though the prioritized S&K list is specific to the South African apparel retail context, this is the first study that developed a ranking of important merchandising S&K that can be replicated in other countries/contexts.

Our findings underscore that a holistic training and recruitment approach should focus on more than just textbook knowledge and encourage a balanced approach. Evidence of the critical importance of soft skills challenges the contemporary educational and instructional methods and invites innovative contextual and holistic learning strategies such as taking one course per semester that is team-taught and incorporates various subjects and skills. With limited and declining resources, educators face the challenge of preparing competent graduates who will succeed within the highly competitive and demanding global apparel industry (Ha-Brookshire & Hawley, 2013). The findings might help focus programmatic and curricular efforts to position textile and apparel programs strategically. Additionally, the study contributes to the literature on equipping apparel merchandising professionals with essential S&K for the 21st century. While the S&K investigated are specific to the South African retail context, the results of this study line up with extant research findings, indicating that many of these S&K appear to be universal and applicable to merchandisers across the global industry.

From a theoretical perspective, this study verified the theoretical efficacy of the AMC framework for studying and prioritizing merchandising S&K. Likewise, the AMC framework can assist with program review and formulating accreditation standards to enhance the overall quality of textile and apparel programs. In terms of methodological contribution, this study was the first to employ adaptive conjoint analysis, a consumer choice and marketing method, to prioritize S&K for merchandising. The overall findings align with previous research; however, social and cultural factors, learning environments, and the industry context can influence application in different countries (Jackson, 2013). For example, the South African apparel retail industry is not as mature as in developed economies, and the emphasis placed on certain S&K might differ between countries and industries.

6. *Limitations and future research*

A limitation of this study was that S&K types important for specific merchandising positions (i.e., buyer, planner, product developer) were not examined. It is possible that merchandising professionals in different positions favor different S&K for completing their responsibilities. For instance, textiles might be viewed as more critical for product developers than planners. Future studies could distinguish between S&K for the different merchandising positions. Knowing about S&K for specialized merchandising roles can assist educators in prioritizing S&K for particular modules. Additionally, it can direct industry recruitment and upskilling professionals in specific positions to be more competitive in the global retail industry.

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