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# Fashion designer's identity self-verification through social media engagement on Instagram

Tin Chun Cheung and Sun Young Choi\* 

\*Correspondence:  
sun-young.choi@polyu.edu.hk  
Institute of Textiles and Clothing, The Hong Kong Polytechnic University, 11 Yuk Choi Rd, Hung Hom, Kowloon, Hong Kong, China

## Abstract

In recent years, online identity and social media engagement have been areas of study that have garnered a lot of interest. However, studies have yet to pinpoint empirical and theoretical connections between engagement and identity. Moreover, current research lacks holistic methods for measuring engagement rate and identity. Our multifaceted study examines how fashion designers use Instagram as a resource to self-verify their complex identities through social media analysis, body and face detection programmes such as Face++ and manual content identification. One-way and two-way ANOVA and t-tests were employed to determine the correlation in engagement rate between designers, image type and influence tier variables. By engaging with followers, designers verify their self-identities, which ultimately reinforces the fashion social identity online. We found variation in followers' engagement behaviour when different identity types, image types, and designers of varying influence levels are presented. According to the result, images that reflected designers' personal identity, such as selfies, body image, and miscellaneous images, drew higher engagement than role identity-related images. Among all image types, the full-body and upper torso more gained follower's attention than a selfie, advertisement and product images in every influence tier. Therefore, fashion designers should consider posting body images as a meaningful form of identity and medium conveying their dressing aesthetic. Our findings suggest managerial implications for designers to strategise their content according to their tiers of influence.

**Keywords:** Fashion designers, Identity self-verification, Instagram, Personal identity, Role identity, Social identity, Social media engagement

## Introduction

Instagram (IG) is a free multi-media sharing application and social networking platform (Edwards & Esposito, 2019). The clutter-free user interface and scheduled sharing system proposition individuals with a blank canvas to effectively perform different identities through their engagement of actions and behaviours (Heivadi & Khajeheian, 2013). Unlike other social media (SM) applications, IG's continuous popularity is owed to its ergonomically designed mobile-friendly features, stories integration, commerce friendliness, and better discovery through hashtagging. Through IG, we can perpetually intertwine our online and offline selves through visual communication (Boyd, 2008; Crewe, 2013).

Fashion designers (FD) have turned to IG due to the exposure they can get through hashtagging, which puts their content onto a news feed database. Through actively engaging and following SM, they are also indirectly using it as a free form of advertising targeted at a wide audience spectrum. IG also provides them with the ease of connectivity with like-minded individuals, discover new people and things, communicate more and make live stories to share with their followers that seem more personal and less staged. Moreover, the Instagram shop feature, *Instagram shopping*, also makes IG more commerce-friendly than other SM applications.

Fashion and dress are visible statements of a person's social, role and personal identity. Functioning as an identification tool, it places an individual in different social situations providing one with an idea of who they are in relation to others. The FDs' identity is a complex identity configuration encompassing facets of the role (Ro) and personal (P) identities. Their identity make-up provokes further studies into understanding the complexities between the correlations of the role and personal identities. This study aims to analyse how designers negotiate presentations of their role and personal identity and evaluate what identity and image type content draws the optimal engagement. This will provide designers with a thorough understanding of their online audience and lead to a content posting strategy. Our objectives are (i) to extract and collect numerical data and images from fashion designers' IG accounts, including a number of followers, likes and comments; (ii) to analyse images through analytical and human body detection tools; (iii) to employ the use of statistical tests such as one-way and two-way ANOVA and t-tests to determine how content and identity type and the level of influence affect engagement rate; (iv) to synthesis the data set in order to identify correlations between the study groups and variables; (v) to identify what variables draw optimal engagement in order to draw out an IG strategy for designers and (vi) to present findings that effectively enhances the research validity of fashion designers' social media posting and engagement behaviours through examining Ro and P-type identity images.

This study will investigate identity formation as a motivator leading to social media engagement. Dolan et al., (2017) used SM to identify brand communication strategies on Facebook, which has set the agenda for social media engagement (SME) research. However, due to the small study sample dominated by dormant SM users, there was a limitation to generalising it for extended study. In this study, however, we have resolved this methodological setback through our selection process by procuring an extensive data set of 95 designers with over 6195 images through 100 days. Following the collection process, we analysed the images, content tagged and identified through utilising *Keyhole* (SM analytical tool) and *Face++* (human body detection API) for a more holistic approach to measuring engagement and identity.

FD poses as a necessary subject to academic study due to their embodiment of individual and brand identity. To investigate SM identity and social media engagement rates (SMER), we have divided identity into personal and role components derived from the social identity theory (Tajfel & Turner, 1979). We expect P & Ro type content to achieve varying levels of SMER, and from the data, we can establish the approach designers should take according to their SM level of influence. To further create a sophisticated

operational policy for optimal engagement rates (ER), we will type images into categories for analysis.

Engagement on SM that encompasses comments, likes and shares are measures of SM attainment abbreviated as SME. Existing studies on online identity (Caffrey, 2017; Subrahmanyam & Šmahel, 2011; Zhao et al., 2008) have studied the relationship between SM engagement and identity. These studies, however, have presumed all identities to be social identities and have not set a clear distinction between the different identity types. Moreover, their findings do not suggest how engagement and identity verification can affect online identity development.

Due to our increasing reliance on SM, it is crucial to study the diverse nature of identity development and SMER. This study will build upon current literature on online identity development and enhance the research validity of FD's SM behaviour and follower engagement. Our study will link empirical and theoretical knowledge and examine how designers use IG identity development as a self-verification tool to reinforce their own identities and the overall fashion social structure.

## **Literature review**

### **Social media and Instagram**

SM is broadly defined as applications and websites that allow individuals to share content, network and negotiate their identities. The privacy settings on Facebook and Twitter have often limited their investigation into online identities. Due to these platforms' mechanics, users have total control over their accounts' privacy settings, which has often restricted researchers' access to their complete profiles. Users can manipulate their profiles (identity) differently according to their audience. On the other hand, IG's imaged based and egalitarian nature encourages users to be more democratic with more even involvement between the users and followers.

IG, one of the prevalent SM in recent years, owes its ability to provide instant visual information communication (Ha et al., 2017). The mobile-friendly features have led to its rapid upsurge in popularity in the fashion industry (Kim & Ko, 2010). However, few designers are still hesitant to adopt SM due to a lack of support on integrating it into their practice (Ramadan et al., 2018). Nevertheless, this phenomenon has led independent designers, major brands and influencers of different market levels to exploit this new form of media (Braojos-Gomez et al., 2015).

IG has several advantages over other SM platforms. Designers have turned to IG due to the exposure they can get through hashtagging, which puts their content onto a news feed database. Furthermore, IG is primarily an image-based application making it more effective to identify image variables, determine identity types and collect ER data. Designers strategically use IG as a free form of advertising to engage with a wide spectrum of audiences. It also provides them with the ease of connectivity with like-minded individuals, discovering new people and things, communicating more, and making live stories to share with their followers that seem more personal and less staged. Smaller independent designers have also taken advantage of the IG store's recent addition, making IG more commerce-friendly than other SM applications.

### Identity types in social identity theory

Identity has often been a topic of debate among scholars in the social sciences. Early theories focused on categorising the self into different roles within a social structure (Thoits & Virshup, 1997). Tajfel and Turner (1979) proposed that identity groups give one a sense of belonging to their socio-cultural environment. The process of social categorisation that allocates individuals into social groupings (them or us) is the basis of Social identity theory (SIT). This then leads to social identification (categorise and adopt an identity) and, subsequently, social comparison (comparing groups). According to the various SIT (Fearon, 1999; Postmes & Branscombe, 2010; Stets & Burke, 2000; Tajfel & Turner, 1979), there are three main types of identity: social, role and personal.

- Social identity (So)—So is the carrying of membership in groups where other individuals share similar views as you do. Here is where we would use the terms “in-group/out-group” to differentiate social groups.
- Role identity (Ro)—Ro identity include social structural positions like jobs and positions known as social types (Stryker & Statham, 1985). These identities confirm ones’ action in relation to others’; their actions and behaviours reinforce the social structure.
- Personal identity (P)—P identities are unique individual identities that distinguish them from others. It is the basic foundation of all identities. One’s P identity may be attracted to various Ro identities, and one develops a self-concept that is independent of others (Stets & Burke, 2000).

However, Thoits and Virshup (1997) have argued that So and Ro identities are both individual and collective identities that are interrelated and should be perceived as a whole; they operate the same way. Differences can only be drawn when we study the individual’s psychological state and social functions. Hence, both So and Ro identities depend on each other by interacting with others in a social environment, ultimately leading to self-verification of identity (Bossio & Sacco, 2017).

Although both So and Ro identities are intertwined, we will focus on and analyse Ro rather than So identity. As So identity inclines more to group membership and Ro is associated more with professions, Ro helps us understand the FDs’ intention of using IG as a promotional platform for followers’ engagement. Besides, due to the FDs’ unique characteristics, it is crucial to reveal individuality rather than conform to typical collectivism; P identity must also be examined.

For a coherent study that links together all capacities of SM identity, we follow a reverse pyramid pattern where our initial research question will start with a general assessment of all image variables and their respective ER. We then streamline our investigation into three hypotheses that inquire about specified areas, e.g. SM influence and its effects on ER. Furthermore, we examine how identity type influences ER, which then disseminates into the comparison of image types. We start off by questioning how designers negotiate their identity on IG.

**Research Question 1.** *How do fashion designers negotiate their personal and role identity on IG through posting content?*

### **Identity self-verification through engagement on IG**

According to self-verification theory in SIT, individuals perform a set of actions and behaviours that ensure others perceive them in ways that confirm their views of their “self” (Stets & Burke, 2000). Individuals employ various strategies in interactions with others to facilitate self-verification, displaying identity cues, such as dressing or speaking a certain way to recognise their identity and act appropriately. It confirms their identity and makes others congruent with their identity (Stets & Burke, 2000; Swann, 1987). Furthermore, individuals may engage in selective interaction depending on others’ feedback, stabilise their self-views, and develop a self-verifying environment (Stets & Burke, 2000). Identity self-verification theory can be applied to fashion designers’ posting behaviour on IG. The designer post dressing and studio images to show their Ro identity as a fashion designer and selfie and miscellaneous objects revealing the P identity, finally confirming and solidifying their self-view by the follower’s feedback with likes, comments and hashtagging. Conversely, fashion designers’ self-verification actions also induce followers’ engagement and congruence.

Their online identity negotiation poses an interesting study area due to their complex self-configuration and verification (De Veirman et al., 2019). Through the engagement, the designer and followers may mutually assure each other’s self-concept. In recent years, academic studies have paid considerable attention to social media engagement. Studies have aimed to use SM data to identify brand communication and engagement (Coelho et al., 2016; Dolan et al., 2017; Tafesse, 2015). However, further research is required to pinpoint empirical and theoretical connections between engagement and identity. By posting content that meets their Ro and P identity expectations, fashion designers will draw high engagement, making them feel good about themselves, which will make their followers feel good about themselves. Therefore, eliciting even higher engagement and following solidifying the fashion designers’ identities.

**Hypothesis 1:** *If followers’ engagement action affects fashion designers’ self-verification strategies, there will be a variance in engagement rate according to designers’ influence level.*

### **Relationship between fashion designer’s role and personal identity**

In journalism (Bruns et al., 2012) have found independent journalists’ SM profiles often to draw higher ER than established journalist organisations; “Twitter visibility appears to be driven by individual personality, not institutional imprint”. Hermida (2013) has similarly found that online audiences prefer to follow independent journalists. Similarly, in fashion, independent designers are now able to showcase their work on an open platform. Many of these talents have been hired to be the creative head for large luxury brands (Virgil Abloh of Off-White for Louis Vuitton menswear and Matthew Williams of 1017-ALYX-9SM for Givenchy Paris etc.). Large brands often strategically link

themselves to these independent designers due to their cult-like following and strong online presence (Battan, 2021). Likewise, on online fashion blogs, users feature well-known fashion brands along with independent labels, which creates a spillover effect where the relatively unknown indie labels end up drawing higher interest from users than well-established brands (Hsiao et al., 2020). Evidently, previous literature suggests that followers are more likely to engage with independent creators socially than large conglomerates because they can relate more to their casual tone, recognised by many industries, e.g., such as fashion and journalism. Particular in fashion, where followers are now able to engage with designers who were previously seen as elusive figure. Admirers were able to see their work in magazines, ad campaigns and catwalk shows, but little was known about the designer. Being provided with the democratic platform we have today, fashionistas are able to socialise (engage) with the designer through following, liking and commenting. This conception of SM makes us hypothesise that FD's P identity type content will draw more engagement than Ro related media.

**Hypothesis 2:** *Followers are expected to engage with FD's unique (personal) identity more than their designers' (role) identity, which was previously readily accessible.*

#### ***Effect of contents type on engagement rate***

Existing studies have also investigated the effects of content type on engagement. Among SM studies in terms of image types have suggested body images and selfies that portray fashion items lean towards higher social engagement levels (Ha et al., 2017). In other studies, selfies have also been the topic of much discussion. Selfies with social cues such as posing with luxury products and physical body or individual's role identity are perceived to attract higher ERs among other images (Hong et al., 2020). Furthermore, selfies with different attributes also affect SM's popularity (Kalayeh et al., 2015) and photos with faces tend to lead to higher engagement on SM (Bakhshi et al., 2014). We have reason to believe that FD's selfies will generate the highest ER among all post content.

**Hypothesis 3:** *Fashion designers' selfies will generate the highest engagement rate among all post content.*

## **Methods**

### **Data procurement**

We collected IG posts from fashion designers of New York Fashion Week, London Fashion Week, Milan Fashion Week and Paris Fashion Week over 100 days (16th October 2020 to 23rd January 2021). The list contained 95 independent designers accounts (48 male and 47 female) having at least 1000 followers, have been active within the past 100 days and have at least posted once within the week during the investigation period. The designers' market levels were allocated in the following: international designer brands (ID), national/local designer brands (ND), international name brands such as Zara and H&M (IN) and private label brands (PV) (Burns et al., 2016). Burns et al. (2016) decipher fashion brands into various market levels according to product variety, target consumer, price points and unique traits attributed to the fashion industry. Table 1 contains examples of designers

**Table 1** Representative designers with IG handles

Market-Level						
ID		ND		IN	PV	
Designer and account	N	Designer & account	N		Designer and account	N
<a href="#">Alexander Wang</a> <a href="#">@alexanderwangny</a>	5.5M	<a href="#">Christopher John Rogers</a> <a href="#">@christopherjohnrogers</a>	201K	n/a	<a href="#">Bethany Williams</a> <a href="#">@bethany_williams</a>	42.2K
<a href="#">Christian Siriano</a> <a href="#">@csiriano</a>	1.6M	<a href="#">Christopher Raeburn</a> <a href="#">@raeburn</a>	62.1K		<a href="#">Bianca Saunders</a> <a href="#">@biancasaunders_</a>	29.8K
<a href="#">Donatella Versace</a> <a href="#">@donatella_versace</a>	6.2M	<a href="#">Emilio Del La Morena</a> <a href="#">@emiliodelamorena</a>	28.7K		<a href="#">Ed Curtis</a> <a href="#">@ed_curtis_</a>	7.8K
<a href="#">Marc Jacobs</a> <a href="#">@themarjacobs</a>	1.6M	<a href="#">Gilda Ambrosio</a> <a href="#">@gildaambros</a>	660K		<a href="#">Matty Bovan</a> <a href="#">@babbym</a>	60.4K
<a href="#">Victoria Beckham</a> <a href="#">@victoriabeckham</a>	29M	<a href="#">Louise Gray</a> <a href="#">@louisgray_</a>	16.5K		<a href="#">Sinead O'Dwyer</a> <a href="#">@sjodwyer</a>	24.5K

ID: International designer brands; ND: National/local designer brands; IN: International name brands; PV: Private label brands/@username—IG handle; n/a: Not applicable; N: Number of followers; M: Million; K: 1000 followers

from our dataset housed into various market level groups with their no. of followers on IG. International market-level designers (ID) typically have the most substantial influence over the fashion industry, followed by ND and PV reflected through their volume of followers. However, in some cases, PV designers that have accumulated a cult following have also been able to amass a more considerable following. Still, our dataset, in general, confirms ID and ND to have higher amounts of followers than PV market-levels designers.

The previous study categorised the designers' account according to their influence level (followers) on IG – nano (N) (<10k), micro (MC) (<50k), mid-tier (MT) (<500k), high tier (HT) (<1m) and top tier (TT) (1m+) (Asano, 2019). Through the breakdown of our designer list, we have adjusted the benchmarks for each tier accordingly—N (1–5k followers), MC (<10k), MT (<100k), HT (100k+) and TT (1m+). However, we have reduced the number of followers in the lowest tier, which will help us evaluate and develop an engagement strategy aimed at new followers to the designers' accounts.

### Image identification and categorisation

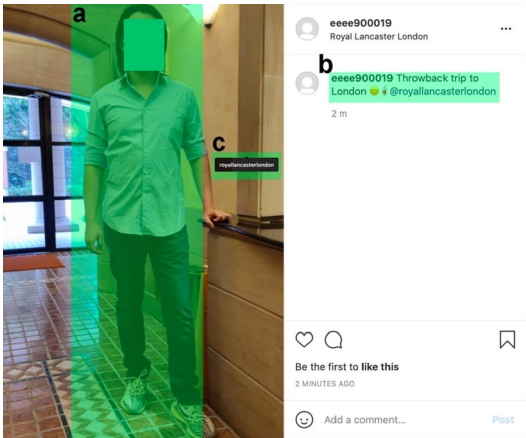
After collecting the data, we identified image content and determined their image type through the body and face detection software. Body and facial detection application programming interfaces (API) are currently widely available such as machine learning (ML Kit) pose detection API, Haar Cascades on OpenCV and Microsoft's Emotion API. However, these programs often lack the ability to recognise overlapped figures of multiple individuals. Furthermore, our primary concern is finding a platform that can accept the URLs of IG images and images we manually upload. MEGVII's Face++ (Megvii, 2020), a human body detection API, overcomes these limitations and can be implemented for our large-scale image analysis. Face++ recognises visual indications such as the presence of a face or body through segmentation and extracting features from the face and body. This provides us with information about faces and/or bodies detected

within an image. Images that did not contain faces and/or bodies were separated for manual analysis.

Precedent studies have assessed the body on SM as a collective whole (Bakhshi et al., 2014; Ha et al., 2017) without considering the body as separate anatomical parts. In anatomy and physiology, the torso is defined as the central part of the human body that is independent of the head and limbs (Miller, 2003); therefore, it is inefficient to consider all images that display different coverages body to be classified into a generalised category. Similarly, in fashion design, fashionistas stress the importance of appreciating the designers’ top half and entire outfit styling as separate features (Hsiao et al., 2020). Through classifying separate upper torso and full-body groups, we can uncover the extent these variables have on followers engagement and the correlation between followers and designers on IG.

Furthermore, previous studies have tried resolving SM posts with ambiguous meanings through combined visual and text analysis (Merler, Cao, & Smith, 2015). This process has demonstrated higher accuracy in SM content examination than image or text only evaluation. We have adopted a similar process for ambiguous posts. Images were analysed in conjunction with post text, hashtags, tagging, comments and location tags to find keywords that ascertain the overall narrative of the post (Table 2). Through our image analysis, we have not found images with overlapped identity statuses. Designers were often overt with what identity type they wished to depict.

**Table 2** Image analysis and categorisation (Jones, 2021a)

Sample image	Analysis & categorisation
	<p><b>a. Face &amp; body recognition</b> (Face++ analysis) ⇒ <i>Full-body image</i></p> <p><b>b, c. Comments &amp; tagging analysis</b> (@royallancasterlondon – name of hotel and comment “Throwback trip to London 📍”) ⇒ <i>Personal identity</i></p>







*Note.* All image examples shown are reproduced by the authors and are styled in a similar manner to the original copyrighted images found on the IG accounts of the fashion designers from this study. The image in table. 2 is a screenshot of a post from the author’s IG account. Please refer to Jones (2021a) for the original image.



Face and/or bodies were tagged accordingly into (i) selfie (S), indications of a face-only image, (ii) upper torso (UT), or (iii) full-body (FB). In addition, the body attributes plugin by Face++ indicated whether there was both an upper and lower body through its recognition of clothing. Though face++ could identify the presence of face or body images, it could not distinguish content with more complex image compositions in some cases.

Researchers tagged unidentified images manually and cross-checked them to enhance accuracy and reliability (Cohn & De la Torre, 2015; Cohn et al., 1999). For tagging consistency, studies have utilised individuals who are well-informed on fashion (Ha et al., 2017); we have a similarly rigorous approach to tagging. The images had to go through a systematic process that involved identifying similar themes by analysing visual cues, hashtags, tags, location tags, comments, and post text to determine an overall theme. This subsequently led to the grouping of images into (iv) advertising (AD)—including ad-campaign, (v) casual placement (CP) of products/non-advert nature, (vi) personal life (PL)—mundane life, holiday, scenery, food, family, friends and pets, (vii) work-life (WL)—design inspirations, studio workspace, exhibitions and fashion shows and (viii) miscellaneous (M)—personal images that do not fit into any other category, i.e. quotes, plain colour backdrops and not including (i), (ii), (iii). The representative images of each category are shown in Table 3.

**Table 3** Image identification categories

Image subject							
Designer			Product		Others		
Selfie	Upper torso	Full-body	Advertisement	Casual product	Personal life	Work-life	Miscellaneous
							

*Note.* All image examples shown in table. 3 are reproduced by the authors and are styled in a similar manner to the original copyrighted images found on the IG accounts of the fashion designers from this study. Please refer (left to right) to *designer* group Ambrosio (2020a); Ferri (2020a, 2020b), *product* group Versace (2021); Williams (2021) and *others* group Bonaldi (2021); Bovan (2020); Tordini (2021b) for the original images.

### Engagement analysis

As a part of the engagement data collection process, we employed *Keyhole*, a social media analytics application that allowed us to track and build a report of the fashion designers' engagement behaviours on IG according to the number of followers with an accurate ER calculator. The ER is calculated through  $\text{likes} + \text{comments} / \text{total followers} \times 100$ , giving a percentage rate (Keyhole, 2020).

### Data computation

One-way and two-way ANOVA in SPSS Statistics v. 26 was employed to compare the ER means of identity types and image groups and determine whether there is a statistical significance according to designer accounts' influence level. A Tukey post-hoc test was used when significance was found among three groups or more.

### Sample dataset

We examined an initial total of 129 designers, but 34 was removed due to inactivity, leaving 95 (48 male and 47 female designers), and collected 6195 images from the accounts. The market level demographic groups contained 29 ID, 26 ND, no IN and 40 PV designers. The number and percentage of images contained S, UT, FB, AD, CP, PL, WL, and M are as shown in Table 4. The mean 'likes' engagement and 'comments' for each influence tier post were N (128 likes; 7 comments), MC (230 likes; 9 comments), MT (411 likes; 8 comments), HT (2403 likes; 23 comments) and TT (29,214 likes; 217 comments). The total dataset is as shown in Table 4.

## Results

### Personal and role identity image analysis

For our study, we further analysed and categorised images into personal and role identity. The study of identity type variables will provide us with further information to develop a comprehensive content strategy for IG and build a designer's solid identity configuration.

Table 5 is the criterion describing P and Ro related identity content for each image category.

Selfie images may appear in both identity groups. For S to be categorised as a P identity, it has to be taken by the designer of themselves primarily showing their faces in a casual environment with no mention of fashion keywords in the text that explicitly relates to fashion. On the other hand, designers wishing to present a Ro identity S image would clearly communicate their identity through posting and tagging fashion related themes. Likewise, for the upper torso and full-body images to appear as a P identity image, it has to be a body snap taken in a casual setting with no relation to fashion design practice. When an image contains multiple parties, we focus on the designer only. This can be determined again by studying the post text and tagging in each post. Designers very often tag their brand, fashion show location, other designers or related keywords to demonstrate their Ro identity. Especially among body images, designers will tag their brand IG handle when wearing their own creations. Images that are tagged with a different fashion IG handle other than their own brand will also be classified as a Ro image.

Furthermore, obscured body images that do not reveal the whole torso, e.g. hidden behind a bag, is also categorised into UT or FB depending on the extent of the body is shown. Body images with obscured faces are also allocated into UT and FB as long as there are text cues to substantiate it as the designer themselves.

Advertisement and casual product placement images can only appear in Ro identity group due to their underlying fashion narrative. AD is professionally taken images with artificial lighting, including ad campaigns, video shoots, catwalk images, magazine spreads. In contrast, CP is a fashion product image that is taken without professional lighting. Other image types include personal life, which encompasses mundane life, holiday, scenery, food, pets, family and friends exclusive to P identity, work-life encompassing images of work in progress, fashion studio, backstage, show, fabric, design inspiration limited to Ro identity and miscellaneous images that do not fit into any other category and is not fashion related exclusively to P identity, e.g. quotes, text and other plain colour backdrops. We analysed 6195 images to study the variance in ER between P & Ro identity content. There were 1006 (16.24%) P and 5,189 (83.76%) Ro identity images. Designers are five times more likely to post Ro identity-related content on IG.

**Table 4** Sample data

Account		Image					Engagement								
Gender (N=95)	Market level (N=95)	IN	PV	Subject (N=6195)	Product	Others	Tier	Followers (M)	Likes (M)	Comments (M)					
M	F	29	0	40	S	UT	FB	253	198	(3.2%)	41	853	(13.8%)	29,214	217
48	47	29	26	0	40	S	UT	198	152	(2.5%)	41	853	(13.8%)	29,214	217
Influence level (N=95)		N	MC	MT	HT	TT	HT	255,898	2403	23	41	853	(13.8%)	29,214	217
8	20	21	30	16			TT	5,069,492	29,214	217					

M: male; F: female; ID: International designer brands; ND: National/local designer brands; IN: International name brands; PV: Private label brands; S: selfie; UT: upper torso; FB: full-body; AD: advertisement; CP: casual product placement; PL: personal life; WL: work-life; M: miscellaneous; N: nano (1–5k); MC: micro (5–10k); MT: mid-tier (10–100k); HT: high tier (100k–1m); TT: top tier (over 1m); M mean; N number

The most popular P identity images were PL (67%), S (11.83%), FB (10.14%), UT (6.96%) and M (4.08%). In Ro category, they were AD (62.71%), WL (16.44%), CP (14.84%), FB (2.91%), UT (2.47%) and S (0.64%). A chi-square test was conducted to determine a connection between designers' image and identity types. This test was chosen on the basis that both are categorical variables. There was a statistical significant relationship between the variables,  $\chi^2 (7, N=6195)=5137.36, p=0.000$ . The effect size for this finding, Cramer's  $V$ , was very strong, 0.911. A one-way ANOVA was also conducted to compare all image types. There was a significant difference in engagement rate for P identity ( $M=1.56, SD=2.12$ ) and Ro identity ( $M=1.16, SD=1.55$ );  $t (6193)=48.21, p=0.000$ .

### SMER analysis of P & Ro identity per influence tier

We hypothesised variations in ER according to designers' influence level (H1) and P images to draw higher engagement in each tier group (H2). A two-way ANOVA was conducted that examined the effect of influence level and identity type on SMER. We found a statistically significant difference in SMER by both influence level [ $F (4)=187.07, p=0.000$ ] and by identity type [ $F (1)=48.21, p=0.000$ ], and the interaction between these terms was also significant [ $F (2)=35.71, p=0.000$ ]. We dissected the groups into influence tiers and examined ER of P& Ro identity according to each tier's image usage through a one-way ANOVA.

- *Nano tier*

There are 79 images in the N tier group. The tier average ER is 4.64 ( $SD=3.69$ ). The mean ER of P images is 6.00 ( $SD=4.29$ ) and Ro images 4.21 ( $SD=3.41, p=0.065$ ). There is a statistically significant difference in mean ER among P and Ro-type identity images at  $p < 0.1$  ( $p=0.065$ ).

- *Micro tier*

There are 732 images in the MC group. The average ER of MC is 2.23 ( $SD=2.15$ ). The mean ER of P images is 2.06 ( $SD=1.39$ ) and Ro images 2.25 ( $SD=2.24$ ). The results suggest no significant difference in mean ER among P and Ro identity images in MC groups ( $p=0.430$ ).











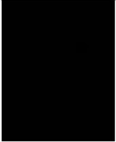
- *Mid-tier*

There are 2042 images in the MT group. The average ER is 1.01 ( $SD=1.40$ ). There is a statistically significant difference in mean ER among P 1.77 ( $SD=2.53$ ) and Ro-type identity images 0.85 ( $SD=0.95$ ) at ( $p=0.000$ ).

- *High tier*

There are 1880 in the HT group. The average ER is 1.04 ( $SD=1.26$ ). There is a statistically significant difference in mean ER among P 1.43 ( $SD=1.73$ ) and Ro-type identity images 1.01 ( $SD=1.21$ ) at ( $p=0.000$ ).

**Table 5** Image categorisation of P & Ro identity

Subject	Image type	P identity		Ro identity	
		Examples	n (%)	Examples	n (%)
Designer	S		119 (11.83)		33 (0.64)
	UT		70 (6.96)		128 (2.47)
	FB		102 (10.14)		151 (2.91)
Product	AD	N/A	N/A		3,254 (62.71)
	CP	N/A	N/A		770 (14.84)
Others	PL		674 (67.00)	N/A	N/A
	WL	N/A	N/A		853 (16.44)
	M		41 (4.08)	N/A	N/A
	<b>Total</b>		1006 (100 %)		5189 (100 %)

Note. P – personal, Ro – role / S – selfie, UT – upper torso, FB – full-body, AD – advertisement, CP – casual product placement, PL – personal life, WL – work-life, M- miscellaneous/ n – number of images, N/A – not applicable  
 Note. All image examples shown in table. 5 are reproduced by the authors and are styled in a similar manner to the original copyrighted images found on the IG accounts of the fashion designers from this study. Please refer to P identity: S - Ambrosio (2021), UT - Jacobs (2020b), FB - Posen (2020), PL - Tordini (2021a) & M - Jacobs (2020a) and RO identity: S - Kuzmickaite (2020), UT - Siriano (2020a), FB - Siriano (2020b), AD - Jones (2021b), CP - Jones (2021c) & WL - Ambrosio (2020b) for the original images.

- *Top tier*

There are 1462 images in the TT group. The average ER of TT groups was 1.09 ( $SD=1.61$ ). The mean ER of P images is 1.10 ( $SD=1.48$ ) and Ro images 1.09 ( $SD=1.67$ ). The results suggest no significant difference in mean ER among P and Ro identity images in TT groups ( $p=0.902$ ).

Overall, the total mean ER of P images ( $M=1.56$ ,  $SD=2.12$ ) was higher than Ro ( $M=1.16$ ,  $SD=1.55$ );  $t(6193)$ . Especially, nano, mid and high tier showed a higher mean ER of P. While MC had a lower mean ER in P and TT, the difference between P and Ro was not statistically significant. The total dataset is as shown in Table 6.

### SMER analysis per image type

In H3, we hypothesise images containing selfies of the designers to generate the highest SMER in accordance with prior studies that have suggested images containing faces on SM draw higher engagement rates (Bakhshi et al., 2014; Ha et al., 2017).

There were a total of 6195 images. The average ER of S was 1.21 ( $SD=1.45$ ), UT 1.67 ( $SD=2.16$ ), FB 3.05 ( $SD=3.30$ ), AD 1.20 ( $SD=1.52$ ), CP 1.04 ( $SD=1.61$ ), PL 1.22 ( $SD=1.31$ ), WL 0.90 ( $SD=1.27$ ) and M 0.53 ( $SD=0.52$ ) with a mean ER of 1.23 ( $SD=1.66$ ).

There was a statistically significant effect of image types on ER as determined by two-way ANOVA [ $F(7, 6187)=55.96$ ,  $p=0.000$ ]. A Tukey post hoc test revealed statistical differences between S & FB ( $p=0.000$ ); UT & FB ( $p=0.000$ ), AD ( $p=0.002$ ), CP ( $p=0.000$ ), PL ( $p=0.015$ ), WL ( $p=0.000$ ), M ( $p=0.001$ ), FB & AD ( $p=0.000$ ), CP ( $p=0.000$ ), PL ( $p=0.000$ ), WL ( $p=0.000$ ), M ( $p=0.000$ ), WL & AD ( $p=0.000$ ) and PL ( $p=0.003$ ). However, there was no statistical significance between S & UT ( $p=0.150$ ), AD ( $p=1.000$ ), CP ( $p=0.942$ ), PL ( $p=1.000$ ), WL ( $p=0.355$ ), M ( $p=0.237$ ), AD & PL ( $p=1.000$ ), M ( $p=0.137$ ), CP & AD ( $p=0.240$ ), PL ( $p=0.434$ ), WL ( $p=0.614$ ), M ( $p=0.481$ ), M & PL ( $p=0.131$ ) and WL ( $p=0.837$ ).

The data specifically suggest that designers that post FB, UT, PL & S images achieve the highest ERs. However, our results suggest that FB images have significantly higher ER than any other image category through multiple comparisons.

### SMER analysis of image type per influence tier

#### *Descriptive engagement strategy for each influence tier*

Drawing from our comprehensive dataset, we propose an engagement strategy for IG to aim at designers of different influence levels. Our findings suggest FB images have statistically higher ERs among all image categories in all influence tiers. However, there are variations in ER among image categories in different influence tiers (Table 7). These results suggest designers of different influence tiers should adopt various strategies when participating in IG according to their influence tier. A two-way ANOVA was conducted that examined the effect of influence level and image type on SMER.

**Table 6** Influence tiers, identity type and SMER

	P			Ro			Total			ER*IT		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>df</i>	<i>F</i>	<i>p-value</i>
N	19	6.00	4.29	60	4.21	3.41	79	4.64	3.69	1	3.51	.065*
MC	93	2.06	1.39	639	2.25	2.24	732	2.23	2.15	1	.62	.430
MT	346	1.77	2.53	1696	.85	.95	2042	1.01	1.40	1	131.12	.000***
HT	142	1.43	1.73	1738	1.01	1.21	1880	1.04	1.26	1	14.76	.000***
TT	406	1.10	1.48	1056	1.09	1.67	1462	1.09	1.61	1	.02	.902
Total	1006	1.56	2.12	5189	1.16	1.55	6195	1.23	1.66	1	48.21	.000***

N: nano (1–5k); MC: micro (5–10k); MT: mid-tier (10–100k); HT: high tier (100k–1m); TT: top tier (over 1 m); P: personal identity; Ro: Role identity; ER: engagement rate; IT: identity type

\* $p < 0.1$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$

- *Nano tier*

Image type had a significant effect on ER at  $p < 0.05$  [ $F(6, 72) = 2.42, p = 0.035$ ] in the nano tier. The sample as a whole in nano tier had relatively high engagement amongst all influence tier groups ( $M = 4.64, SD = 3.69$ ). Out of the image groups UT ( $M = 8.72, SD = 5.93$ ), CP ( $M = 7.02, SD = 3.71$ ), FB ( $M = 6.35, SD = 2.93$ ) and S ( $M = 5.51, SD = 0.00$ ) drew the highest ERs meanwhile AD ( $M = 4.52, SD = 3.62$ ) and O ( $M = 3.07, SD = 2.71$ ) drew below average for nano tier. We have to take into consideration though that there was only one selfie type content among the nano tier image group, the  $M$  value could change if more data was collected.

- *Micro tier*

Image type had a significant effect on ER [ $F(6, 725) = 8.89, p = 0.000$ ] in the micro tier. The sample as a whole in micro tier drew an engagement ( $M = 2.23, SD = 2.15$ ). Out of the image groups FB images ( $M = 4.25, SD = 2.37$ ), S ( $M = 3.25, SD = 1.76$ ), CP ( $M = 2.86, SD = 3.28$ ) and UT ( $M = 2.42, SD = 1.5$ ), drew above average amongst micro tier group meanwhile AD ( $M = 1.99, SD = 1.92$ ) and O ( $M = 2.06, SD = 1.81$ ) drew below average.

- *Mid-tier*

Image type had a significant effect on ER [ $F(7, 2034) = 69.37, p = 0.000$ ] in the mid-tier. The sample as a whole in mid-tier drew an engagement ( $M = 1.01, SD = 1.4$ ). Out of the image groups FB images ( $M = 5.26, SD = 6.48$ ), UT ( $M = 2.24, SD = 2.37$ ) and O ( $M = 1.16, SD = 0.87$ ) drew above average amongst mid-tier group meanwhile AD ( $M = 0.99, SD = 0.97$ ), CP ( $M = 0.79, SD = 1.05$ ) and S ( $M = 0.79, SD = 0.66$ ) drew below average.

- *High tier*

Image type had a significant effect on ER [ $F(7, 1872) = 15.29, p = 0.000$ ] in the high tier. The sample as a whole in high tier drew an engagement ( $M = 1.04, SD = 1.26$ ). Out of the image groups FB images ( $M = 2.67, SD = 2.13$ ), UT ( $M = 1.83, SD = 1.42$ ) and CP ( $M = 1.20, SD = 0.147$ ) drew above average amongst high tier group mean-



while AD ( $M=1.00$ ,  $SD=1.19$ ), O ( $M=0.66$ ,  $SD=0.88$ ) and S ( $M=0.92$ ,  $SD=0.78$ ) drew below average.

- *Top tier*

Image type had a significant effect on ER [ $F(7, 1454)=10.66$ ,  $p=0.000$ ] in the top tier. The sample as a whole in top tier drew an engagement ( $M=1.09$ ,  $SD=1.61$ ). Out of the image groups FB images ( $M=2.10$ ,  $SD=2.15$ ) and S ( $M=1.23$ ,  $SD=1.6$ ) drew above average amongst top tier group meanwhile AD ( $M=1.05$ ,  $SD=1.62$ ), UT ( $M=0.93$ ,  $SD=1.1$ ), O ( $M=0.84$ ,  $SD=1.21$ ) and CP ( $M=0.86$ ,  $SD=1.26$ ) drew below average.

For this part of our study, the O type images didn't need to be classified into subtypes PL, WL and M. Our main aim is to compare image types that explicitly relate to fashion and the designer themselves; therefore, it is appropriate to analyse O group subtypes as a whole when comparing image types. The total dataset is as shown in Table 7, and Fig. 1 shows the ER by image types in each tier.

## Discussion

The fashion industry has shifted towards engaging with individuals through SMs. IG being a visual-centric SM, has become a major engagement platform between fashion designers and their followers. Although this phenomenon has had an enormous impact on contemporary society, very little has been systematically studied due to a lack of relevant data. Our study presents a novel method of collecting data, i.e., using SM analytical tools such as *Keyhole*, human body detection API MEGVII face++, and manual content identification for a more holistic approach to measuring engagement identity. This paper presents a dataset specifically focused on the studies of fashion designers, engagement strategy and identity. This study's results reveal the difference in individuals' engagement behaviour towards different identity type and image categories. By referring to this study, designers can strategise their posting patterns to draw optimal ERs and verify their identity as fashion designer. Furthermore, our dataset and holistic approach towards measuring SMER and identity can be adapted into supporting various studies in SM & identity analysis in the future. Through our study, we have discovered that narrative, identity status and visual cues of content can actively affect the ER of IG posts.

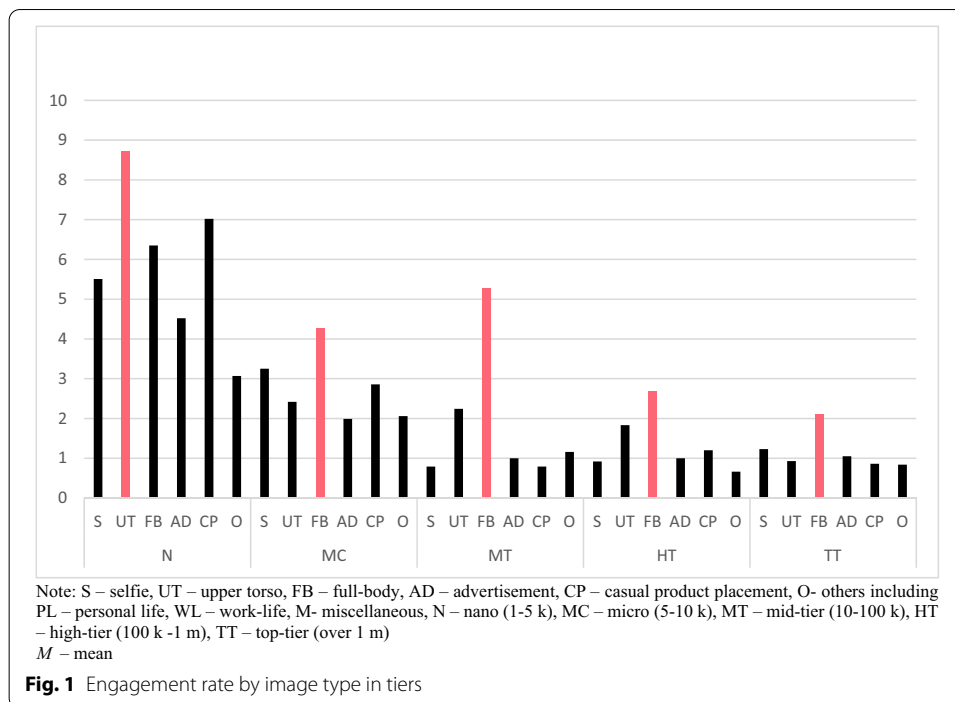
Our study shows that advertising (52.5%) and work-life (13.8%) are among the most common image types observed on IG. However, fashion designers also frequently posted their personal images, including selfie, body images, personal life and miscellaneous images (21.4%). This implies that designers primarily use their IG to market their fashion-related work. At the same time, they want to engage with the followers by posting personal type content socially. However, ER of personal and role identity results suggest that P identity-related images showed a significantly higher mean engagement rate than Ro identity images. Therefore, fashion designers should consider interacting with their followers through exposing themselves rather than emphasising their profession.

Out of all influence tiers, our results suggest a significant difference between P and Ro identity images among nano, mid and high tier designer groups. There was no significant difference found in micro and top tier groups. These results advocate that designers of different influence tiers should consider approaching IG with different posting strategies. Mid and high tier designers may want to post more P identity-related images in order to

**Table 7** SMER results for different tiers and image types

S	UT		FB		AD		CP		O		Total								
	n	M	n	M	n	M	n	M	n	M	n	M							
N	1	5.51	-	8.72	5.93	8	6.35	2.93	42	4.52	2	7.02	3.71	21	3.07	2.71	79	4.64	3.69
MC	10	3.25	1.76	2.42	1.5	38	4.25	2.37	466	1.99	70	2.86	3.28	131	2.06	1.81	732	2.23	2.15
MT	53	.79	.66	2.24	2.37	31	5.26	6.48	609	1.00	531	.79	1.05	777	1.16	.87	2042	1.01	1.4
HT	13	.92	.78	1.83	1.42	45	2.67	2.13	1,435	1.00	87	1.20	.147	269	.66	.88	1880	1.04	1.26
TT	75	1.23	1.6	.93	1.1	131	2.10	2.15	702	1.05	80	.86	1.26	370	.84	1.21	1,462	1.09	1.61
Total	152	1.21	1.45	1.67	2.16	253	3.04	3.31	3,254	1.20	770	1.04	1.61	1,568	1.03	1.29	6,195	1.23	1.66

S: selfie; UT: upper-torso; FB: full-body; AD: advertisement; CP: casual product placement; O: others including; PL: personal life; WL: work-life; M: miscellaneous; N: nano (1–5k); MC: micro (5–10k); MT: mid-tier (10–100k); HT: high-tier (100k–1m); TT: top-tier (over 1m)



draw higher engagement from their followers. Meanwhile, the difference in engagement between P and Ro type images among nano, micro and top tier designers is negligible.

Drawing from previous studies on image types and SM, we hypothesised selfies to draw the highest ER among all tiers’ designers. Nevertheless, the results reject our hypothesis of selfies generating the highest ER and suggest that FD’s full-body images drew the highest ER among all tiers except the nano tier having the highest ER of the upper torso. Through a Tukey post-hoc test, the higher ER under selfie x full-body, upper torso x full-body, advertisement, casual product placement, and others (personal life, work-life and miscellaneous), full-body x advertisement, casual product placement, and others, and advertisement x others, suggest that these combinations would be effective strategies for fashion designers. It also suggests the mix of selfie and AD, CP, O; AD and CP, CP and O images without any upper torso and full-body images do not effectively engage followers.

It implies that according to the nature of fashion designers’ followers, they are more interested in seeing FDs’ fashion styling rather than FDs’ face. This supports the idea of the full-body as an essential part of the fashion designer identity; dress articulates the body into meaningful form (Entwistle, 2015)—drawing more individuals to identify and engage with. Therefore, designers should consider posting more full-body and upper torso images of themselves that reveal their dressing aesthetic and style.

Furthermore, each tier revealed a different ER regarding image usage. In the nano tier, the upper torso gained the highest ER, and CP was the next. Among mid-tier and high tier, full-body drew the highest ER, and the upper torso was the second. The full-body also engaged the followers in positive reaction the most among the micro and top tier, and the second image type with the higher ER was the selfie. Accordingly, fashion designers should strategise different ways to engage followers according to their influence level. It can assist with verifying fashion designers' identity.

### **Conclusions**

Our research findings effectively enhance research validity by analysing fashion designers' and followers' social media posting and engagement behaviours by examining Ro and P-type identity images of different image type categories. This study contributes to the current lack of literature on SM engagement, where image types are often not recognised as an identity variable that can trigger engagement behaviour. We have also successfully examined images as identity variables that designers can control when verifying their own identities, which elicit followers' engagement, ultimately reinforcing the fashion social identity online.

Moreover, through our results, we were able to devise fashion designers' strategies to follow according to their tier of influence, putting them at a statistical advantage in matters concerning SM engagement. We have further provided managerial implications for designers to recognise the content types they should post according to their number of followers. Designers that adopt this strategy in their SM practise can build a more considerable following and encourage higher engagement drawn from followers, effectively increasing their market value and building a stronger brand identity. We also aim to encourage fashion designers and other creative individuals to use IG as an effective medium to develop solid social identities according to their market level and influence on IG.

In matters concerning academia, this paper delivers new knowledge on comparisons between P & Ro type identities and how designers use them as self-verification tools to elicit engagement from followers, reinforcing their own identities and fashion social structure. Our results also provide statistical data that illustrates consumer and human behaviour and how their engagement behaviours differ according to the media, image type and popularity of the IG operator. Finally, this study also effectively emphasises the importance of fashion-related research, which are unstudied academically. And conclusively, fashion designers' identity studies will ultimately lead to future studies on studying the correlations between consumer behaviour and online created brand identities, which is also of academic and practical importance.

### **Limitations and future directions**

Despite this study's contributions that link together empirical and theoretical knowledge, it carries some limitations. There were other study variables that we did not consider which may affect the ERs of posted content, e.g., time of post, aesthetic type of

the designer, age, gender, educational and career background. However, these were not included due to difficulty collecting the designer's personal details, which were not widely available in many cases. Future studies, though, should consider the motivations behind the different images posted. Gender-related issues such as gender and posting habit, engagement rate, follower behaviour and identity verification are all areas of study that can broaden literature on SMER. Nevertheless, our study has successfully provided a theoretical basis for future SMER, fashion and online identity studies to build upon.

#### Abbreviations

AD: Advertisement; API: Application program interface; CP: Casual product placement; ER: Engagement rate; FB: Full-body; FD: Fashion designer; HT: High tier; ID: International designer brands; IG: Instagram; IN: International name brands; M: Miscellaneous; MC: Micro; MT: Mid-tier; N: Nano; O: Others; ND: National/local designer brands; P: Personal identity; PL: Personal life; PV: Private label brands; Ro: Role identity; S: Selfie; SIT: Social identity theory; SM: Social media; SMER: Social media engagement rate; So: Social identity; TT: Top tier; UT: Upper torso; WL: Work-life.

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#### Authors' contributions

TCC originated the research idea, collected data, and drafted the first manuscript under the guidance of SYC, his supervisor. SYC contributed to developing the research design and the final manuscript. Both authors read and approved the final manuscript.

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#### Availability of data and materials

The datasets generated and/or analysed during the current study are available from the corresponding author on reasonable request.

#### Declarations

##### Competing interests

Not applicable.


##### Authors information

Tin Chun Cheung Doctoral student, Institute of Textiles and Clothing, The Hong Kong Polytechnic University, 11 Yuk Choi Rd, Hung Hom, Kowloon, Hong Kong. Sun Young Choi Assistant professor, Institute of Textiles and Clothing, The Hong Kong Polytechnic University, 11 Yuk Choi Rd, Hung Hom, Kowloon, Hong Kong.

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