

**MOBILE PHONE ACCESS AND USAGE AMONG FEMALE MICRO-
ENTREPRENEURS
IN BOMBAY CITY TODAY¹**

**Aneela Babar, Judith Shaw and Marika Vicziany
(Monash Asia Institute, Monash University)**

1. Introduction

In the last five years there has been phenomenal growth in the use of telecommunications, led by technological developments which have improved the accessibility and affordability of mobile phones. Over 90 per cent of the world's population now lives in areas covered by mobile cellular networks, and in 2006 the worldwide number of mobile phone subscribers passed the two billion mark. With mobile phone penetration approaching saturation point in the developed world, most of the growth has occurred in developing countries, particularly in India and China, which have emerged as the world's fastest growing markets for mobile phones. Nowhere has the mobile-led

¹ 'This paper was presented to the 17th Biennial Conference of the Asian Studies Association of Australia in Melbourne 1-3 July 2008. It has been peer reviewed via a double blind referee process and appears on the Conference Proceedings Website by the permission of the author who retains copyright. This paper may be downloaded for fair use under the Copyright Act (1954), its later amendments and other relevant legislation.'

transformation of telecommunications been more powerful than in India, where the use of mobile communications has increased at an explosive rate, surpassing traditional fixed services by a considerable margin. During 2006 4.5 million new mobile subscribers were added every month, and by the end of 2006, 93 million of the country's 140 million telephone subscribers were mobile phone owners (TRAI 2006).

As an accessible, affordable technology which increases efficiency in sourcing labour and jobs, supplies, customers, market information and financial services, mobile phones can make a powerful contribution to the microenterprises operated by the poor and near-poor. Although several studies explore the interactions between mobile technology and microenterprises, the role of mobile phones in women's microenterprises remains under-researched. With evidence that women's access to mobiles and patterns of usage are constrained by education, traditional cultures and belief systems and economic inequality (Huyer et al 2003), the impact of mobile technology on women's microenterprises cannot be inferred from studies of male-owned businesses.

This paper presents and analyses the preliminary findings from a study of telecommunications access and usage among female micro-entrepreneurs in Bombay city. In particular, it explores the following key questions. First, what are the characteristics of women who possess and use mobiles, and how are they distinguished from those who do not? Second, how often and for what purposes do they use mobiles, and what features of the technology are most attractive? Third, what is the actual and potential impact of mobile telecommunications on the performance of their businesses? Fourth, how does gender mediate their relationship to mobile technology?

2. Background and context ²

Bombay or Mumbai is a cosmopolitan city of over 15 million people that largely depends on employment generated by the services sector. The old industries that created Mumbai in the

² This section is based on four years of fieldwork in Bombay city 2004-2008 by Marika Vicziany, Jayant Bapat, Sanjay Ranade, Sneha Subedhar and Kavita Rane.

nineteenth century, in particular textiles, have relocated to other parts of India so that Mumbai today is a city of bankers, traders, IT companies, insurers, transporters, educators and the many other shops and service providers needed to meet the daily demands of them all. Our study of 185 female micro-entrepreneurs focussed on three particular occupations: beauticians (38), tiffin-makers (46) and fish traders (101). We selected these three occupations because they are common in Mumbai, dominated by women and represent women from a broad spectrum of socio-economic groups ranging from the poor and socially disadvantaged (Koli fish traders) to the relatively prosperous middle classes (beauticians). The social diversity of our sample provides material for an analysis of the relationship between women's socioeconomic status and telecommunications access and usage.

Beauty parlours in Mumbai are to be found throughout the city ranging from elaborate, five star hotel establishments catering to the demand of the super rich to more modest businesses run from the homes of middle class women. It is only the latter who are of interest to us in this paper. Many of the most successful small-scale beauty parlours are run by recent migrants, especially Gujaratis. Marathi ladies are now also entering the trade, perhaps an indication of upward mobility amongst the Marathi community? The city's cosmopolitan character is reflected in the number of Christian and Muslim women who have also set up businesses in this field. Beauticians in India perform a range of services including hair styling, massage, applying henna, facials, manicure and pedicure. The parlours are a microcosm of India's international links – increasingly local hair and other fashions reflect a wide variety of tastes and styles ranging from Bollywood to Hollywood to London and Paris. Our research suggests that the tiffin-makers, by contrast, are invariably Hindus of middle class or lower middle class status. In addition to cooking food that is then carried to the client at the appointed time in a tiffin or metal container, the tiffin-makers are frequently employed in additional work including the provision of home cooked meals that are served just outside their homes in the evening, embroidery and glove making. This occupational diversity reflects the lower earnings of tiffin-makers relative to beauticians. Like the beauticians, Bombay's tiffin-makers can be found all over the city catering to a wide clientele including office workers and students.

At this stage of our research we cannot be confident of the caste identity of either the beauticians or the tiffin-makers, but impressions suggest that there are probably more Brahmins amongst the tiffin-makers than amongst the beauticians; on the other hand, Brahmins certainly do not dominate the tiffin-making business. This suggests that the caste norms of earlier decades have faded: there was a time when dwellers in Indian cities did not accept food from anyone who was not a Brahmin. This no longer applies, although low caste tiffin-makers are not to be found. Rather, clean, high-to middle castes dominate both the professions of tiffin-making and running small scale beauty parlours.

The female fish traders in our study are all Koli, one of the original tribal groups to inhabit the islands of Bombay. Their arrival in Bombay dates back thousands of years. Today, they are one of the poorest local communities, with the majority being classified as ‘Scheduled Tribes’ entitled to some affirmative action strategies. Only the street dwellers of Bombay city are poorer than the Koli. Today, Bombay city still has 23 Koli villages that have survived urbanization but the business of fishing is in a state of collapse owing to competition from non-Koli trawlers and the high cost of diesel which the remaining Koli owners of trawlers have to pay (Ranade, 2008). Over-fishing has also reduced the size of the daily catch and the size of the fish. Many of the Koli ladies interviewed in our survey reported that they purchased fish from the fishers and on-sold the fish in local markets. Their husbands were either unemployed or working at other jobs. Until not so long ago, the husbands used to fish and it was these fish that were then carried by the Koli women to the markets. A second threat to their economic security has arrived in Bombay in the form of male Bihari fish sellers. These recent migrants have been compelled to slot into the burgeoning metropolis at the bottom end – hence they purchase fish from the fishers and sell the fish directly to households by going from door to door (Rane, 2005). As the economic pressures on the Koli have mounted, they have been compelled to diversify their employment where possible. In the process, the old tribal Goddesses of the Koli that provided protection to the culture of fishing are increasingly being supplanted by Hindu Gods which are popular with the wider, non-Koli and non-fishing communities (Ranade, 2008). Despite this the Goddess Ekveera and the God Khandoba remain the focus of worship amongst the general Koli community. In the meantime, Mumbadevi, the patron Goddess of Bombay and originally a Koli icon, has now become so much absorbed into the Hindu pantheon that the Koli has virtually

abandoned her to the affections of the Gujaratis and Marathis (Vicziány and Bapat, 2008a). In those Koli villages where fishing remains an important livelihood, the tribal goddesses remain powerful (Vicziány and Bapat, 2008b).

3. Methodology

A structured questionnaire was administered to 185 survey respondents by students from the Department of Communications at the University of Mumbai who participated in a training and survey-piloting process. The survey was supplemented by unstructured in-depth interviews with twelve carefully selected respondents from the three groups. The sampling methodology was a mixture of snowball and purposive sampling. It is not intended to present a representative cross-section of any of the three occupations. The latter sampling method has proven to be elusive in the past, because access to information from these communities depends on building a trusting relationship with those people who are willing to speak to outsiders. There is a deep suspicion of all outsiders, because of the Bombay Municipality's long history of trying to tax all citizens, including the poor who are only occasionally employed in menial tasks. Our sample, therefore, seeks to provide an evidence base from which inferences can be drawn about the effect of microenterprise occupation and socioeconomic status on telecommunications access and usage.

The attached map shows the locations where the questionnaires and interviews were conducted.

4. FINDINGS

4.1 Income and socio-economic status

In 2008 the Asian Development Bank revised the standard \$1 per day poverty line upwards to set a new Asian Poverty Line (APL) of \$1.35 per day, which corresponds to INR7,000 per month for a family of four (the median household size of the sample) (Asian Development Bank 2008).

On the basis of the APL we constructed three household income categories: poor (incomes below INR7,000), near-poor (INR7,000-10,000) and non-poor (more than INR10,000). As Table 1 indicates, there are substantial wealth disparities between the occupations. The beauticians are by far the most well-off, confirming what we had already observed on the ground in Mumbai. Fewer than 10 per cent are below the poverty line and 70 per cent are non-poor. The tiffin-makers are significantly poorer on average, with more than a quarter below the poverty line. As a group, the Koli fish traders are by far the poorest, with nearly two thirds below the poverty line and fewer than 10 per cent in the non-poor category. The income status categories in Table 1 are based on the median sample household size of four persons, and do not take into account variations between groups in household size. As Koli households are slightly larger on average than tiffin-makers and beauticians (with a mean household size of 4.8, 4.4 and 4.0 respectively), their poverty status is understated.

Table 1: Household income status (per cent)

	Beauticians	Tiffin-makers	Fish traders	Total
Poor	7.7	26.1	61.0	41.1
Near-poor	15.4	56.5	29.0	33.0
Non-poor	71.8	15.2	7.0	22.7
Income status ambiguous or not disclosed	5.1	2.2	3.0	3.2

	100.0	100.0	100.0	100.0
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The average age of the micro-entrepreneurs was 41. The Koli fish traders were the oldest and least well-educated group (Table 2), a finding consistent with the position of the Koli as a scheduled tribal group, who have traditionally experienced significant social and economic disadvantages relative to mainstream society. Fieldwork has also revealed that the younger the Koli women are, the more likely it is that they have left traditional jobs and sought employment in other sectors of the Bombay economy.³ Many of them, of course, remain unemployed.

Table 2: The micro-entrepreneurs: mean age and educational attainment

	Age	Years of education
Beauticians	31.8	12.8
Tiffin-makers	42.3	8.2
Fish traders	44.5	4.0
All	41.2	6.9

Standard indicators such as housing quality, asset ownership and the respondent's educational attainment, provide additional information on household socio-economic status (see for example Tiwari et al 2005). These indicators confirmed the existence of a socio-economic divide between the mostly middle-class beauticians and the poorer Koli fish traders, with the tiffin-makers occupying a near-poor middle ground. As Table 3 indicates, there were clear distinctions between the three occupations on key housing and asset ownership indicators, with the Koli fish traders worse off than the tiffin-makers, who in turn were significantly poorer on average than the beauticians. While nearly all of the sample households reported that they were food-secure, it is noteworthy that the only exceptions were to be found among the Koli women, 15 per cent of

³ One of our in-depth Koli case studies is of a young lady from a village in northern Bombay: she completed a Masters of Information Technology Systems at a university in Melbourne and is now employed by an IT firm in Sydney. Her story, however, is an unusual one of rapid upward economic mobility for a Koli girl (see forthcoming paper by Vicziany, 2009). The general point of employment diversification amongst the Koli is also made by Sally Warhaft (2003).

whom disagreed with the statement that “household members always have enough to eat”. Similarly, fish traders were less likely than tiffin-makers or beauticians to agree with the statement “household members can meet essential non-food needs”, at 80 per cent, 93 per cent and 100 per cent respectively.

Table 3: Key socioeconomic indicators

	Beauticians	Tiffin-makers	Fish traders	All
Percentage of households with three or more rooms	51.3	6.8	6.0	15.7
Mains water supply to house (per cent)	97.4	77.2	52.0	68.1
Ownership of household assets (per cent)				
Vehicle	23.1	9.1*	6.0*	10.3
Motorcycle	38.5	13.6	12.0	17.8
Refrigerator	97.4	88.6	53.0	71.4
Home computer	33.3	27.2	3.0	15.1
Indoor latrine	79.5	56.8	17.0	39.5

* In most cases the vehicles owned by tiffin-making and Koli households were motorised rickshaws, which are smaller and cheaper than standard motor vehicles and are usually employed in the microenterprises of male household members

4.2 The microenterprises and other household income sources

Overall, about one third of the microenterprises were low-earning activities yielding monthly net profits of less than INR2,500 (US\$56) (Table 4). Fish-traders were the most likely to operate

low-earning enterprises, at 45 per cent, in comparison with tiffin-makers (28 per cent) and beauticians (22 per cent). At the other end of the scale, over a third of beauticians owned high-earning enterprises with net profits of INR5,000 or more, in comparison with around a fifth of tiffin-makers and just over 10 per cent of fish traders.

Table 4: Microenterprise net profits (per cent)

Rupees per month	Beauticians	Tiffin-makers	Fish traders	All
Less than 1,000	8.2	2.2	9.8	7.9
1,000- 2,500	13.5	26.1	34.8	27.8
2,500 – 5,000	43.2	50.0	44.5	45.5
More than 5,000	35.1	21.7	10.9	18.8
Total	100.0	100.0	100.0	100.0

As Table 5 shows, not only did their businesses earn higher net profits on average than those of other respondents, beauticians were also more likely to have additional sources of household income. Moreover, their relatively high average incomes are attributable more to the presence of additional income sources than to the success of the women's businesses. Most of the beauticians operated their enterprises as a secondary income source, the primary income being provided by one or more male household members in wage employment: only 5 per cent of beauticians relied solely on the beauty parlour business. By contrast, tiffin-makers and fish-traders were far more likely to rely on their enterprises as the sole source of household income, at 36 and 45 per cent respectively. Whereas beauticians typically did not involve male family members in their businesses, many of the tiffin-making and fish-trading businesses operated as household rather than individually-owned enterprises, employing two or three family members. In the case of fish-traders, a common division of household labour was between husbands and sons, who caught the fish, and women, who sold them in the market or house-to-house. In many cases, however, both the women and their husbands sold fish because the husbands had lost their jobs in the ailing

fishing industry. Where the male relatives of tiffin-makers and fish-traders worked in other occupations, they were typically low-income, insecure informal sector activities such as construction labour or rickshaw driving, whereas the husbands and sons of beauticians were most likely to be in regular salaried employment, usually in the public sector.

Table 5: Income diversification (per cent)

Number of household income sources	Beauticians	Tiffin-makers	Fish traders	All
1	5.4	36.4	44.7	32.9
2	67.6	52.3	42.1	50.6
3 or more	27.0	11.4	13.2	16.5
Total	100.0	100.0	100.0	100.0

4.3 Business location

Tiffin-makers were the most likely to operate their businesses from home: 76 per cent reported doing so, in comparison with 49 per cent of beauticians. Fish-traders are based at local markets or use a mobile hand-cart to sell their products from house to house, and only one fish-trader reported working from her home. In the case of the Koli women, working outside the home acts as another pressure point on their lives – they are not able to look after children, sick household members or take a nap when business is slack.

4.4 Start-ups

Entry rates into each of the three occupations are low: overall, three quarters of the businesses were more than five years old. Nearly all fish traders (94 per cent) had worked in their businesses for more than five years, a finding consistent with the caste-based nature of fish-

trading and the lack of alternative opportunities available to poorly educated, low-caste women. The beauty parlour business had the highest proportion of new entrants who had started their businesses less than two years prior to the survey, at 17 per cent, in comparison with 10 per cent of tiffin-makers. Low entry rates suggest that these income sources are not especially popular with new labour force entrants who may prefer emerging opportunities in Mumbai's rapidly growing financial and service sectors, such as the selling of life insurance..⁴

4.5 Telecommunications ownership and access

Although the recurrent costs of fixed telephone connections are lower than those of mobiles, their appeal is limited by high initial costs, long waiting times for installation, and the superior functionality and convenience of cell phones. As a result, new fixed line connections are mostly non-residential and the number of fixed line subscriptions has reached a plateau at about 47 million nationally, while mobile subscriptions exceeded 93 million in 2006 and are continuing to grow at a rapid rate (TRAI 2006). Similarly, in the respondent households cell phone subscriptions have outstripped landlines, with ownership rates of around 70 per cent and 40 per cent respectively (Table 6). Ownership of a landline is strongly associated with household income: 60 per cent of non-poor households had a landline, in comparison with 49 per cent of near-poor households and only 24 per cent of the poor (Table 6). While cell phone ownership is also positively associated with income, it is noteworthy that more than half of the poorest households still own a mobile phone (Table 6 was recalculated by income group to show this). This finding supports evidence elsewhere that ownership disparities between income groups exist but are narrowing, due largely to the spread of mobile technology. Due to lower infrastructure costs and pricing innovations such as pre-payment, mobiles are accessible and attractive to the poor (Kshetri 2002,). However, it remains the case that over a fifth of

⁴ This observation is based on a case study of a young untouchable (dalit) woman in Bombay who acts as an itinerant insurance agent for a large Indian company. She had a degree in economics from Bombay university (Viczianny, 2005).

households do not own a telephone, and the non-owners are heavily concentrated among the poor: 70 per cent of households which did not own either a cell-phone or a fixed line were poor.

It is notable also that most of the beauticians and tiffin-making households owned a phone; by contrast 39% of fish traders had no telephone.

Table 6: Household telephone ownership by occupation (per cent)

	Beauticians	Tiffin-makers	Fish traders	All
Cellphone only	41.0	32.6	39.0	39.2
Landline only	2.6	13.0	11.0	10.2
Cellphone and landline	53.8	50.0	11.0	30.1
No telephone	2.6	4.3	39.0	20.5
Total	100.0	100.0	100.0	100.0

Some interesting findings emerge when we examine telecommunications access and usage as distinct from ownership. As usage tariffs are substantially lower on landlines, it would be expected that where available, they would be used in preference to mobiles. This was not the case, however: although 40 per cent of households contained a landline, only 11 per cent of respondents reported using it as their primary means of making calls. There are several explanations for low rates of landline usage. First, in many households the landline is present only in name: several women reported that their landlines were out of order due to faulty equipment or infrastructure faults or had been disconnected due to failure to pay telephone bills. Landlines were particularly likely to be out of order in low-income households: although nearly a quarter of poor households reported owning a landline, only 3 per cent used it on a regular basis (Table 7). Second, as landlines are not mobile, they are not extensively used by women who work full-time outside the home. Thus, tiffin-makers - who typically base their enterprises at home - were far more likely than others to report using landlines as their primary means of communication, at 33 per cent, in comparison with the other occupations (less than 5 per cent).

Similarly, household ownership of a cell phone does not provide women with a ready means of access to telecommunications unless they themselves are the owners of the cell-phones. All respondents who owned a cell phone reported using it as their primary means of making calls, but where a cell phone is owned by another family member, most women reported using public call shops as their primary means of access. Less than a quarter of respondents reported using a family member's phone on a regular basis. In most non-poor families, economically active adults possess their own individual cell phones, but where poorer households have a mobile phone, there is typically a single handset in the possession of a male family member. Thus, women from non-poor households are significantly more likely than those from poorer households to report using the cell phone as their primary means of communication. This also means that the pent up demand for cell phones amongst Bombay's poor is considerable, especially if the costs can be reduced.

Public call shops were the most common means of communication overall, supporting findings elsewhere that they remain the most popular facility for making calls in India, notwithstanding the rapid increase in mobile penetration (Zainudeen et al 2006). They are extensively used by women from households with no telephone or faulty fixed lines, and by women who do not own their own cell phones. In addition, many cell phone owners reported occasionally using public call shops for international calls (which are not available on most mobile plans), or when they run out of credit on their pre-paid accounts.

As Table 7 shows, telephone non-users were concentrated among the poor, although it is notable that only 6 per cent of respondents reported that they did not use a phone at all, supporting evidence elsewhere of widespread telecommunications use even among the Indian poor. For example, a recent study of more than 2,000 households encompassing a variety of urban and rural locations found that only 12 per cent of low-income individuals had not used a phone in the previous 12 months (Zainudeen et al 2006).

Table 7: Primary method of making calls by occupation (per cent)

	Beauticians	Tiffin-makers	Fish traders	All
Landline	2.6	32.6	3.0	11.2
Respondent's own cellphone	82.1	30.4	15.0	35.5
Cellphone of another family member	2.6	15.2	7.0	8.8
Public call shop	12.8	19.6	62.0	42.0
Do not use telephone	-	2.2	13.0	6.5
Total	100.0	100.0	100.0	100.0

4.6 Reasons for not using a cell-phone

While over 70 per cent of non-poor respondents used a cell phone as their primary means of communication, cell phone use declines sharply with income, to 30 per cent among the near-poor and just 15 per cent among the poor (Table 7). As Table 7 shows, the bulk of the poorest occupational group, the fish traders, used public call shops.

When non-users were asked the principal reason for not using a cell phone, the majority stated that they would like to have a cell phone but could not afford one at the present time (53 per cent). The costs far outweighed perceptions of how useful mobile phones were for business: only 22 per cent of non-users said that their businesses would not benefit from mobile phones compared with more than half who were concerned with the expense.

Despite this socio-economic differentiation in mobile phone use, the pent up demand for mobile phones was considerable in the short term. Of the female micro-entrepreneurs who did not currently use mobile phones all three occupational groups had significant percentages of women intended to start using one in the next six months: 40 per cent of beauticians, 33 per cent of tiffin makers and 16 per cent of fish-traders. In other words, even the working poor expressed a pent up demand for mobile phones in the short term.

4.7 How the respondents use telecommunications technology

Most respondents adapted or selectively used mobile technology to reduce their costs. All mobile owners used the network to receive incoming calls, but only 56 per cent reported making outgoing calls on a daily basis and nearly all reported using ‘beeping’ or intentional missed calls, which enable them to use the network free of charge, albeit in a limited fashion (see Donner 2007, Sey 2007). They made limited use of the more sophisticated non-verbal features of mobile technology: only 18 per cent regularly sent or received text messages, and 63 per cent of mobile owners reported never having used their phones for text messaging. Only two respondents reported having used the broadcasting function on their handsets and only one reported using her phone to access the internet.

4.9 Impact on business

Table 9: Mobile users: perceptions of business impacts

	Per cent agreeing with statement		
	Beauticians	Tiffin-makers	Fish traders
My business profits have increased since I started using a cell-phone.	82.0	36.4	15.8
Since starting to use a cell-phone I work more hours a week	61.8	14.3	-
Because of the cell-phone I have more time for leisure	20.6	50.0	-
I have more customers since I started using a cell-phone	85.3	31.8	-
Having access to a cell-phone has helped me to find new customers.	79.4	34.8	-
I would not be able to stay in business without access to a cell-phone	79.4	10.0	-

Table 4.9 gives the impression that the poorest occupational group in our survey, the fish traders, did not have a high opinion about how mobile phones had helped their business. This result, however, is misleading. As the most marginalised community in Bombay, and currently besieged with economic difficulties, the Koli are also very wary of sharing their most intimate details with outsiders. This is especially true of anything related to their income and assets. Moreover, as we argued above (Section 4.6) 15 per cent of non mobile phone users amongst the Koli intended to start using a mobile phone in the next six months.

A better interpretation of Table 4.9 is to suggest that the experiences of the tiffin-makers may reflect the future experience of the fish traders once more women come to own their own mobile phones. The overwhelming conclusion from Table 4.9 is that the working poor like the ladies who prepare tiffins, benefit personally and commercially from mobile phones.

5. Conclusion

In this conclusion, we focus on the poorest female micro-entrepreneurs in Bombay because their practices and attitudes towards mobile phones provide an index of what very poor female entrepreneurs in a similar situation may be experiencing. The data on the middle class beauticians and also the near-poor tiffin-workers shows that mobile phones are important to women involved in small businesses. But in the case of the very poor Koli fish sellers the future demand for mobiles remains considerable. 39 per cent of the Koli women in our survey lived in households with mobile phones but only 15 per cent of these had their own mobiles (Table 4.6). Mobiles controlled by other family members, especially husbands, were inaccessible to the women. Most of them, therefore, reported using public call shops (62 per cent) and only 7 per cent said that they could use a mobile owned by another family member (Table 4.7). Of those fish traders who did not currently use mobiles, 16 per cent stated that they intended to start using a mobile phone in the next six months. The overwhelming evidence is that even in the case of poor Koli fish sellers, mobiles are perceived to be desirable. The most common constraint on using mobiles across the three occupational groups was the cost, relative to other options. This

represents a great market opportunity for mobile phone companies that are willing to bring costs within the reach of the working poor.

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